Head First Java 3rd edition Sierra Test Bank

SKU: 9781491910771-TEST-BANK

Head First Java, 3rd Edition

ISBN 9781491910771 | Chapter 1: Dive in A Quick Dip: Breaking the Surface

Total Questions: 150

Multiple Choice

Q1.
Which file extension is used for a Java source code file?

A) .class
B) .java ✓ Correct
C) .jar
D) .jvm

Rationale: A Java source code file is written with the .java extension.

Q2.
Which tool compiles Java source code into bytecode?

A) java
B) javac ✓ Correct
C) javadoc
D) jar

Rationale: The javac compiler translates Java source code into bytecode.

Q3.
Compiled Java bytecode is stored in a file with which extension?

A) .src
B) .java
C) .class ✓ Correct
D) .exe

Rationale: After compilation, Java bytecode is placed in a .class file.

Q4.
Which component runs compiled Java bytecode?

A) Java Virtual Machine ✓ Correct
B) Java compiler
C) Text editor
D) Source parser

Rationale: The JVM loads and executes compiled Java bytecode.

Head First Java 3rd edition Sierra Test Bank

Q5.

When a Java application starts, the JVM looks for which specially written method?

A) run()
B) start()
C) execute()
D) main() ✓ Correct

Rationale: The JVM begins execution at the main() method.

Q6.

Which method header matches the Java application entry point shown in the chapter?

A) public void main(String args)
B) static public int main(String[] args)
C) public static void main(String[] args) ✓ Correct
D) private static void main(String args[])

Rationale: The standard entry point is public static void main(String[] args).

Q7.

In Java code, which symbol ends a statement?

A) Colon
B) Comma
C) Semicolon ✓ Correct
D) Period

Rationale: Java statements terminate with a semicolon.

Q8.

Which symbols define a code block in Java?

A) [ ]
B) ( )
C) < >
D) { } ✓ Correct

Rationale: Curly braces enclose Java code blocks such as classes, methods, and loops.

Q9.

Which operator is the Java assignment operator?

A) = ✓ Correct
B) ==
C) :=
D) =>

Rationale: A single equals sign assigns a value to a variable.

Head First Java 3rd edition Sierra Test Bank

Q10.

Which operator tests equality in Java?

A) =
B) == ✓ Correct
C) ===
D) !=

Rationale: Two equals signs are used to test equality.

Q11.

Which comparison operator means "less than" in Java?

A) >
B) < ✓ Correct
C) ==
D) <=

Rationale: The < operator compares whether one value is less than another.

Q12.

Which comparison operator means "greater than" in Java?

A) <
B) > ✓ Correct
C) ==
D) >=

Rationale: The > operator compares whether one value is greater than another.

Q13.

Which line correctly declares an integer variable named weight?

A) weight int;
B) int = weight;
C) int weight; ✓ Correct
D) weight = int;

Rationale: Java variable declarations place the type before the variable name.

Q14.

Which line is a valid single-line comment in Java?

A) /* this line disturbs me
B) -- this line disturbs me
C) # this line disturbs me
D) // this line disturbs me ✓ Correct

Rationale: A single-line comment in Java starts with two forward slashes.

Head First Java 3rd edition Sierra Test Bank

Q15.

According to the chapter, Java is primarily described as what kind of language?

A) Procedural language
B) Markup language
C) Object-oriented language ✓ Correct
D) Assembly language

Rationale: The chapter explicitly identifies Java as an object-oriented language.

Q16.

What does a class represent in Java, as introduced in the chapter?

A) A compiler directive
B) A piece of your program ✓ Correct
C) A command-line argument
D) A file extension

Rationale: The chapter states that a class represents a piece of your program.

Q17.

Where must methods be declared in Java?

A) Inside a class ✓ Correct
B) Outside all classes
C) Only inside main()
D) Only inside loops

Rationale: Java methods must be declared within a class definition.

Q18.

What do you write inside a method's curly braces?

A) Only class names
B) Only variable types
C) Statements that describe how the method is performed ✓ Correct
D) Only comments

Rationale: Method bodies contain statements that specify the method's actions.

Q19.

Which statement best describes Java source file structure as presented in the chapter?

A) Put methods in files and classes in methods
B) Put statements in classes and files in methods
C) Put a class in a source file, methods in a class, and statements in a method ✓ Correct
D) Put methods in source files and statements outside methods

Rationale: The chapter summarizes Java structure as class in file, methods in class, statements in method.

Head First Java 3rd edition Sierra Test Bank

Q20.

How many main methods must a Java application have, according to the chapter?

A) One per class
B) At least one per method
C) Exactly one per source file
D) At least one per application ✓ Correct

Rationale: The chapter states that a Java application needs at least one main method.

Q21.

What is the primary difference between System.out.print and System.out.println?

A) print is only for numbers, println is only for text
B) println inserts a newline, while print stays on the same line ✓ Correct
C) print compiles source code, println runs bytecode
D) println can only be used inside loops

Rationale: println adds a newline after output, whereas print does not.

Q22.

In Java, the condition inside a while loop must evaluate to what type?

A) int
B) String
C) boolean ✓ Correct
D) char

Rationale: A Java conditional test must result in a boolean value.

Q23.

Which statement about Java boolean tests is correct?

A) An int can always be used directly as a loop condition
B) Only a boolean can be directly tested without a comparison operator ✓ Correct
C) Strings are automatically converted to booleans in if tests
D) A while loop condition may be omitted if x is nonzero

Rationale: The chapter notes that only booleans can be directly used as conditions without comparison.

Q24.

What happens if a while loop's conditional test is false before the first iteration?

A) The program terminates immediately
B) The loop runs once, then stops
C) The loop block does not run ✓ Correct
D) The JVM throws a syntax error

Rationale: If the condition is false initially, execution skips the while block.

Head First Java 3rd edition Sierra Test Bank

Q25.

Which looping constructs are identified in the chapter as Java looping constructs?

A) repeat and until
B) foreach and repeat
C) while, do-while, and for ✓ Correct
D) loop and iterate

Rationale: The chapter names while, do-while, and for as Java looping constructs.

Q26.

Which statement best explains Java's "write once, run anywhere" promise?

A) Java source files run directly on any device without compilation
B) The same Java application can run on different devices using a JVM ✓ Correct
C) Java programs are rewritten automatically for each operating system
D) Java only runs on web browsers

Rationale: Portability comes from compiling to bytecode that can run on different JVMs.

Q27.

Which sequence correctly describes the basic Java workflow from the chapter?

A) Run source code, then compile, then package
B) Type source code, compile with javac, then run bytecode on a JVM ✓ Correct
C) Create bytecode, then write source code, then run javac
D) Compile with JVM, then run with javac

Rationale: The chapter outlines writing source, compiling with javac, and running on the JVM.

Q28.

Why was Java designed to use a bytecode compiler instead of interpreting source code directly at runtime?

A) To avoid using classes
B) To eliminate the need for a JVM
C) To improve performance compared with direct runtime translation from source ✓ Correct
D) To make variables dynamically typed

Rationale: The compiler discussion explains that direct interpretation from source would be much slower.

Q29.

According to the chapter, what is one major role of the Java compiler?

A) Executing main() line by line
B) Checking many type and access violations before runtime ✓ Correct
C) Managing device hardware directly
D) Replacing the JVM in production

Rationale: The compiler serves as an early line of defense against type and access errors.

Head First Java 3rd edition Sierra Test Bank

Q30.

Which statement about Java performance is most consistent with the chapter?

A) Java remains one of the slowest mainstream languages
B) Java is generally considered very fast today, though not the fastest ✓ Correct
C) Java is faster than C and Rust in all cases
D) Java cannot be improved by virtual machine optimizations

Rationale: The chapter says Java is now considered very fast, though not the fastest language.

Q31.

Compared with C and Rust, what trade-off does the chapter highlight about Java?

A) Java uses less memory but runs slower
B) Java uses a lot of memory ✓ Correct
C) Java cannot support object orientation
D) Java does not compile to bytecode

Rationale: The chapter explicitly notes that Java uses a lot of memory compared with C and Rust.

Q32.

Which statement about Java versioning is accurate based on the chapter?

A) Version numbers were always stable and predictable
B) Rapid release began with Java SE 1.2
C) Since Java SE 9, Java has used a rapid release model ✓ Correct
D) Java stopped changing version names after JDK 1.0

Rationale: The chapter states that Java has followed a rapid release model since Java SE 9.

Q33.

When was Java initially released to the public, according to the chapter?

A) January 23, 1996 ✓ Correct
B) January 1, 1995
C) July 4, 1997
D) March 15, 1998

Rationale: The chapter gives January 23, 1996 as Java's initial public release date.

Q34.

What does the chapter say about older and newer Java code styles?

A) Only the newest style is ever shown
B) Older styles are ignored because they are obsolete
C) You may encounter both older and newer code in real-world Java ✓ Correct
D) Older code cannot run on modern JVMs

Rationale: The chapter emphasizes that Java programmers often encounter both old and new coding styles.

Q35.

In the phrase String[] pets = {"Fido", "Zeus", "Bin"};, what is pets?

A) A method

B) A String array ✓ Correct

C) A boolean expression

D) A class file

Rationale: The syntax declares pets as an array of String values.

Q36.

What does the expression pets.length return?

A) The last valid index in the array

B) The number of characters in each element

C) The number of elements in the array ✓ Correct

D) The memory size of the array in bytes

Rationale: The length property gives the total number of elements in the array.

Q37.

How are Java arrays indexed, according to the chapter?

A) They are one-based

B) They are zero-based ✓ Correct

C) They begin at negative one

D) They use only even numbers

Rationale: Java arrays are zero-based, so the first element is at index 0.

Q38.

If an array contains 14 elements, what is the index of the last element?

A) 12

B) 13 ✓ Correct

C) 14

D) 15

Rationale: A 14-element zero-based array has valid indexes from 0 through 13.

Q39.

What range of values does Math.random() return before any multiplication or casting?

A) 0 through 1 inclusive

B) 1 through 10

C) 0 up to but not including 1 ✓ Correct

D) -1 through 1

Rationale: The chapter states that random() returns a value between 0 and not-quite-1.

Q40.

What is the purpose of the cast in (int) (Math.random() * oneLength)?

A) To convert the result to a String
B) To remove whitespace
C) To force the result to be an integer ✓ Correct
D) To compare two arrays

Rationale: The cast changes the floating-point result into an int for array indexing.

Q41.

What does the + operator do when used between String values in the chapter examples?

A) Subtracts one String from another
B) Concatenates Strings together ✓ Correct
C) Compares Strings for equality
D) Sorts Strings alphabetically

Rationale: With Strings, + joins text together into a larger String.

Q42.

In the line int z = Integer.parseInt(num);, what is Integer.parseInt used for?

A) Printing an integer
B) Converting a String to an int ✓ Correct
C) Comparing two integers
D) Declaring a new array

Rationale: Integer.parseInt converts the String representation of a number into an int.

Q43.

In the example try/catch block, which exception type is caught?

A) NullPointerException
B) IOException
C) ArithmeticException
D) FileNotFoundException ✓ Correct

Rationale: The catch clause in the example specifically catches FileNotFoundException.

Q44.

Which statement best describes the relationship between if and while tests in Java?

A) if tests require integers, while tests require booleans
B) Both rely on boolean conditions ✓ Correct
C) while tests are only for Strings
D) if tests cannot use comparison operators

Rationale: The chapter explains that both if and while use boolean conditional tests.

Head First Java 3rd edition Sierra Test Bank

Q45.

A student writes while (x) { } where x is declared as int x = 1;. Why is this invalid in Java?

A) while loops cannot use variables
B) Integers may only be used in for loops
C) The condition must evaluate to boolean, not int ✓ Correct
D) x must be declared inside the loop

Rationale: Java does not treat integers as booleans in conditional tests.

Q46.

Which statement about whitespace in Java is correct according to the chapter?

A) Every space must match the book's formatting exactly
B) Whitespace is illegal inside statements
C) Most whitespace does not matter ✓ Correct
D) Whitespace can replace semicolons

Rationale: The chapter notes that most whitespace in Java is not significant.

Q47.

What problem exists in a while loop if the loop variable is never changed and the condition stays true?

A) A cast exception
B) A compilation warning only
C) An infinite loop ✓ Correct
D) A missing class file

Rationale: If the condition never becomes false, the loop continues forever.

Q48.

In the chapter's discussion of source files, which statement is presented as the rule for beginners?

A) A source code file holds one class definition ✓ Correct
B) A source code file must hold exactly three classes
C) A source code file can never contain methods
D) A source code file is the same as a bytecode file

Rationale: The chapter introduces source files as holding one class definition.

Q49.

Which Java platform edition is identified as supporting embedded and mobile devices in the Internet of Things?

A) Java EE
B) Java FX
C) Java ME ✓ Correct
D) Java Card only

Rationale: The chapter names Java Platform, Micro Edition (Java ME) for embedded and mobile/IoT use.

Head First Java 3rd edition Sierra Test Bank

Q50.

According to the chapter, which of the following is an example of a device category that may run Java?

A) Only desktop workstations
B) Only web servers
C) Devices such as cell phones, ATMs, and parking meters ✓ Correct
D) Only database appliances

Rationale: The chapter lists devices including cell phones, ATMs, credit cards, and parking meters as Java-capable.

Q51.

A junior developer says, "I saved my Java program as Invite.java and now I want to run it on the team laptop." Which workflow should you recommend?

A) Compile the source with javac to produce bytecode, then run the class on a JVM ✓ Correct
B) Run the .java file directly as machine code on the operating system
C) Convert the source file to a text file, then execute it with the compiler
D) Start the JVM first so it writes the source code, then compile the result

Rationale: Java source is compiled by javac into bytecode, which is then executed by the JVM.

Q52.

A support analyst is reviewing a failed Java application startup. Which method signature should the analyst expect the JVM to look for first when launching a standard application?

A) public void start(String args)
B) static int main()
C) public static void main(String[] args) ✓ Correct
D) public class main(String[] args)

Rationale: The JVM starts a standard application by locating and invoking public static void main(String[] args).

Q53.

A student places executable statements directly inside a class body but outside any method and asks why the file will not compile. What is the best explanation?

A) Statements must be placed inside a method, and methods must be inside a class ✓ Correct
B) Statements can appear only before the class declaration
C) A class may contain only one statement block total
D) Java allows statements only inside arrays and loops

Rationale: Java code structure requires statements to be inside methods, which themselves are declared inside classes.

Q54.

A developer wants output from several print operations to appear on separate lines in a console log. Which approach is most appropriate?

A) Use System.out.print for every line because it automatically appends a newline
B) Use System.out.println when each output should end with a newline ✓ Correct
C) Use Math.random before each print to force line separation
D) Use only comments between print statements to create line breaks

Rationale: System.out.println prints the text and then inserts a newline.

Head First Java 3rd edition Sierra Test Bank

Q55.

During a code review, a trainee writes while (x) { } where x is declared as int. What should the reviewer say?

A) It is valid because any nonzero integer is treated as true in Java

B) It is valid only when x is greater than 1

C) It is invalid because a while condition must evaluate to a boolean ✓ Correct

D) It is invalid only if x was initialized with a literal

Rationale: Java requires the conditional test in a while loop to be a boolean expression, not an int.

Q56.

A new programmer is debugging a loop that never ends. Which change most directly addresses the risk of an infinite while loop?

A) Add more comments inside the loop

B) Ensure the loop condition can eventually become false ✓ Correct

C) Replace the loop with an if statement that runs once

D) Move the variable declaration outside the class

Rationale: A while loop continues as long as its condition is true, so some logic must allow that condition to become false.

Q57.

A faculty member asks students to compare '=' and '==' in Java. Which explanation is correct?

A) '=' compares two values, while '==' declares a variable

B) '=' assigns a value, while '==' tests equality ✓ Correct

C) '=' and '==' are interchangeable in conditional tests

D) '=' is for Strings only, while '==' is for integers only

Rationale: In Java, '=' performs assignment and '==' performs an equality comparison.

Q58.

A developer is preparing a tiny Java utility and wants to know the minimum startup requirement for the application. Which statement is most accurate?

A) Every class in the application must contain its own main method

B) The application needs at least one class and one main method to start execution ✓ Correct

C) The application can start with only statements in a source file and no class

D) The JVM creates a main method automatically if one is missing

Rationale: A Java application must have at least one class and one main method for execution to begin.

Q59.

A team lead wants a concise explanation of Java portability for a nontechnical manager. Which statement best reflects the chapter's description?

A) Java programs are written once as source, compiled to bytecode, and run on different devices using a JVM ✓ Correct

B) Java programs are rewritten for each operating system after compilation

C) Java programs run only on devices made by the same vendor as the compiler

D) Java portability depends on avoiding classes and methods

Rationale: Java's portability comes from compiling source to bytecode that can run on any platform with a compatible JVM.

Head First Java 3rd edition Sierra Test Bank

Q60.
A developer is selecting Java for a service that must be reasonably fast but is running on memory-constrained hardware. Based on the chapter, which trade-off should be anticipated?

A) Java is generally very fast, but it tends to use more memory than C or Rust ✓ Correct
B) Java is slower than Python and uses less memory than C
C) Java cannot run efficiently because it has no compiler
D) Java uses little memory because bytecode is smaller than source files

Rationale: The chapter notes that modern Java is considered fast, though it uses more memory than C and Rust.

Q61.
A student has a source file containing a single class definition and asks what file extension should be used before compilation. Which answer is correct?

A) .class
B) .jvm
C) .bytecode
D) .java ✓ Correct

Rationale: Java source code files use the .java extension.

Q62.
A developer wants to explain why Java does not interpret source text directly at runtime in the usual workflow. Which explanation aligns with the chapter?

A) Direct interpretation of source would make Java run much more slowly ✓ Correct
B) The JVM cannot read text files of any kind
C) Java source is always converted straight to native machine code only
D) Source interpretation is avoided because Java has no typing rules

Rationale: The chapter explains that compiling to bytecode first helps avoid the very slow performance of pure source interpretation at runtime.

Q63.
A programmer creates three word arrays and wants one random element from each to build a phrase. Why is each array's length needed?

A) To determine how many semicolons must be added
B) To generate a valid random index range for each array ✓ Correct
C) To convert the array into a method call
D) To make the JVM locate the main method

Rationale: Array length is used to produce random indices that stay within valid positions of the array.

Q64.
A learner sees int rand1 = (int) (Math.random() * oneLength); and asks why the cast is present. What is the best response?

A) The cast changes the value into a String index
B) The cast forces the random numeric result into an int for array indexing ✓ Correct
C) The cast converts bytecode into source code
D) The cast adds one to the random value so arrays begin at 1

Rationale: Math.random returns a floating-point value, so casting to int is used to obtain an integer index.

Head First Java 3rd edition Sierra Test Bank

Q65.
A code reviewer notices String phrase = wordListOne[rand1] + " " + wordListTwo[rand2]; What Java operation is being used to combine the pieces?

A) Subtraction
B) Casting
C) Concatenation with + ✓ Correct
D) Boolean comparison

Rationale: The + operator is used here to concatenate Strings into a larger phrase.

Q66.
A student is trying to access the first item in a String array named pets. Which index should be used?

A) 1
B) 0 ✓ Correct
C) -1
D) pets.length

Rationale: Java arrays are zero-based, so the first element is at index 0.

Q67.
A developer accidentally presses Enter in the middle of a quoted String while typing code from the chapter into an editor. What is the most likely result?

A) The compiler will automatically merge the lines inside the String
B) The program will run but print an extra blank line
C) The code will fail to compile because the String literal is broken ✓ Correct
D) The JVM will convert the return key into a plus sign

Rationale: The chapter warns not to break a quoted String across lines when typing, or it will not compile.

Q68.
A new hire asks whether every class in a large Java application must contain a main method. Which answer is most accurate?

A) Yes, because the JVM starts every class separately
B) No, only the class used to start the application must have main, though test classes may also have one ✓ Correct
C) Yes, unless the class contains only comments
D) No, because Java applications never use main methods

Rationale: Only the startup class needs a main method, although other classes may include main methods for testing.

Q69.
A developer wants to explain why Java requires classes around code. Which rationale best matches the chapter?

A) Java is object-oriented, and classes serve as blueprints for objects ✓ Correct
B) Classes are required only for loops, not for methods
C) Classes exist mainly to reduce memory use below C
D) The JVM can execute only arrays, so classes are placeholders

Rationale: The chapter explains that Java is an object-oriented language and classes are blueprints for objects.

Head First Java 3rd edition Sierra Test Bank

Q70.

A student asks what the compiler contributes beyond producing a file. Based on the chapter discussion, what is the strongest answer?

A) It converts source to bytecode and catches many type and access violations before runtime ✓ Correct

B) It executes the bytecode line by line on each device

C) It replaces the JVM when security is not needed

D) It stores all output that println would otherwise display

Rationale: The compiler produces bytecode and serves as an early line of defense by detecting many errors before execution.

Q71.

A developer writes a loop as follows: int x = 4; while (x > 3) { System.out.println(x); } The program hangs during testing. What is the most likely cause?

A) The condition is false before the loop starts

B) The loop body never changes x, so the condition stays true ✓ Correct

C) The println statement resets x to zero

D) The loop requires an else block to terminate

Rationale: Because x is never updated, x > 3 remains true and the loop becomes infinite.

Q72.

A student is asked to place code correctly in a new Java file. Which arrangement will compile if syntax is otherwise correct?

A) Statements inside a method, method inside a class, class inside a .java file ✓ Correct

B) Method inside a statement, statement inside a class, class inside a loop

C) Class inside a method, method inside a statement, statement inside a file

D) Statements directly in the file, with methods optional and classes unnecessary

Rationale: Java source is organized as classes in files, methods in classes, and statements in methods.

Q73.

A developer needs a loop that repeats while a condition remains true. Which construct from the chapter is the most direct choice?

A) println

B) while ✓ Correct

C) catch

D) parseInt

Rationale: The while loop repeats execution of its block as long as its boolean condition is true.

Head First Java 3rd edition Sierra Test Bank

Q74.
A student wants code to run only when x equals 3 and otherwise skip that block. Which structure best fits the requirement?

A) while (x = 3)
B) if (x == 3) ✓ Correct
C) for (x == 3)
D) catch (x == 3)

Rationale: An if statement with x == 3 runs its block only when the equality test is true.

Q75.
A developer wants one message to print regardless of whether an earlier if condition is true. How should the code be structured?

A) Place the always-run statement after the if/else block ✓ Correct
B) Place the always-run statement only inside the if block
C) Place the always-run statement only inside the else block
D) Replace the if statement with a comment

Rationale: Code placed after the if/else block executes regardless of which branch was taken.

Q76.
A student is reading older Java code and newer Java code in the same organization. Which guidance from the chapter is most relevant?

A) Older Java code is rare and can usually be ignored
B) You are likely to encounter both older and newer coding styles in real-world Java work ✓ Correct
C) Only the newest Java API classes can be executed by the JVM
D) Java code more than five years old cannot be compiled

Rationale: The chapter notes that real-world Java work often involves both old and new code styles and APIs.

Q77.
A developer is writing a console utility and wants to convert the String value "8" into an int before arithmetic. Which line best accomplishes this?

A) int z = Integer.parseInt("8"); ✓ Correct
B) int z = Math.random("8");
C) String z = Integer.parseInt("8");
D) boolean z = Integer.parseInt("8");

Rationale: Integer.parseInt converts a numeric String such as "8" into an int.

Q78.
A trainee asks why an exception handler was used around readTheFile("myFile.txt"). Which answer best fits the example shown?

A) To repeat the file read until it succeeds
B) To respond when the named file cannot be found ✓ Correct
C) To convert the file into a String array
D) To make the compiler ignore syntax errors

Rationale: The catch block handles FileNotFoundException and prints a message when the file is missing.

Head First Java 3rd edition Sierra Test Bank

Q79.

A developer is adapting the BeerSong example and notices that after beerNum changes from 2 to 1, the output still uses the plural word variable from earlier in the loop. What is the flaw?

A) The loop should use a for statement instead of while

B) The singular/plural word is not recalculated after decrementing before the next wall line is printed ✓ Correct

C) The String variable cannot be changed inside a loop

D) The println method cannot print variables and Strings together

Rationale: After decrementing, the program may print the next count using an outdated word value instead of switching to singular when beerNum becomes 1.

Q80.

A team is creating an IoT prototype and wants a Java technology suited for embedded and mobile devices. Which platform from the chapter is most appropriate?

A) Java ME ✓ Correct

B) Java SE 1.0 only

C) HotSpot VM source editor

D) Javac Lite

Rationale: The chapter identifies Java Platform, Micro Edition (Java ME) as suitable for embedded and mobile devices, including IoT use.

Q81.

A developer is troubleshooting why a code sample in a class does not compile. The file contains a while loop directly in the class body with no method around it. What fix is needed?

A) Move the while loop inside a method such as main ✓ Correct

B) Delete the class declaration and keep only the loop

C) Replace while with catch

D) Add another source file extension after .java

Rationale: Executable statements like while loops must be placed inside a method, not directly in the class body.

Q82.

A programmer creates a file that contains only a main method with no surrounding class declaration. What is the best correction?

A) Add a class declaration enclosing the main method ✓ Correct

B) Change main to println

C) Move the method to a comment block

D) Rename the file with a .class extension only

Rationale: A Java method must be declared inside a class, so main needs a surrounding class definition.

Head First Java 3rd edition Sierra Test Bank

Q83.
A student is given the output requirement DooBeeDooBeeDo and must choose print versus println inside a loop. Which choice is necessary to preserve the output on one line?

A) Use println for every output call
B) Use print for the repeated pieces so no newline is inserted ✓ Correct
C) Use catch after each output call
D) Use main twice in the same class

Rationale: System.out.print keeps output on the same line, which is necessary for the shown result.

Q84.
A developer wants to explain why Java gained a reputation for improved speed over time. Which chapter detail best supports that explanation?

A) Java became fast because arrays changed to one-based indexing
B) Performance improved with technologies such as the HotSpot VM and other enhancers ✓ Correct
C) Java is fast only when source files are not compiled
D) Java removed the JVM to improve execution speed

Rationale: The chapter attributes major Java performance improvements to the HotSpot VM and related enhancements.

Q85.
A student must choose the correct condition for a loop that should execute only when z is exactly 17. Which option is correct?

A) while (z = 17)
B) while (z > 17)
C) while (z == 17) ✓ Correct
D) while (17)

Rationale: The equality operator in Java is ==, so while (z == 17) tests whether z is exactly 17.

Q86.
A programmer is building a phrase generator like Phrase-O-Matic and accidentally uses a random index equal to the array length. What operational problem is most likely?

A) The JVM will silently create a new array element
B) The selected word will always be the first element
C) The index is outside the valid zero-based range for the array ✓ Correct
D) The compiler will convert the index into a boolean

Rationale: Valid array indices run from 0 to length - 1, so an index equal to length is out of range.

Q87.
A project mentor asks a learner to explain the practical value of semicolons in the chapter's examples. Which answer is best?

A) They mark the end of each statement ✓ Correct
B) They begin code blocks
C) They identify class names
D) They create array lengths

Rationale: In Java, statements are terminated with semicolons.

Head First Java 3rd edition Sierra Test Bank

Q88.

A support engineer is helping a novice who says, "My app has many classes, so I assume the JVM runs all of their main methods automatically." What is the best correction?

A) Yes, the JVM runs every main method it finds in all loaded classes

B) No, the JVM starts with the class specified at launch and executes its main method ✓ Correct

C) No, Java applications do not use classes at runtime

D) Yes, but only if each main method returns an int

Rationale: The JVM begins with the class provided at the command line and starts execution from that class's main method.

Q89.

A learner sees the line Dog myDog = new Dog(name, size); and asks what operational step it represents in the sample code. Which answer is most appropriate?

A) It compares two Dog objects for equality

B) It creates a Dog object using the provided name and size values ✓ Correct

C) It declares an array of Dog methods

D) It starts the JVM on the Dog class

Rationale: The expression new Dog(name, size) constructs a Dog object with the given arguments.

Q90.

A developer is documenting the chapter's basic comparison operators for new interns. Which set consists only of operators explicitly highlighted for simple boolean tests?

A) <, >, == ✓ Correct

B) +, -, =

C) &&, ||, !=

D) /, %, ++

Rationale: The chapter specifically highlights less than, greater than, and equality as simple comparison operators.

Q91.

A student wants a one-sentence explanation of what happens after javac successfully compiles a source file. Which answer is most accurate?

A) The compiler immediately executes the source statements itself

B) A .class file containing bytecode is produced for the JVM to run ✓ Correct

C) The source file is deleted and replaced by machine code only

D) The main method is converted into comments for safety

Rationale: Compilation produces a .class file of bytecode that the JVM can execute.

Q92.

A programmer is asked to predict whether the following code will print anything: int z = 27; while (z == 17) { System.out.println("run"); } What is the correct conclusion?

A) It prints once because z is an int

B) It prints repeatedly because all while loops run at least once

C) It prints nothing because the condition is false initially ✓ Correct

D) It fails because while cannot compare integers

Rationale: Since z is 27, the condition z == 17 is false, so the loop body does not execute.

Head First Java 3rd edition Sierra Test Bank

Q93.

A team member asks why Java can support runtime flexibility such as dynamic binding even though the compiler checks types aggressively. Which explanation best matches the chapter discussion?

A) The compiler ignores all type rules so the JVM can decide everything later

B) Some datatype issues can still emerge at runtime because flexibility is needed for features like dynamic binding ✓ Correct

C) Dynamic binding works only when programs have no classes

D) Runtime flexibility eliminates the need for compiler checks

Rationale: The chapter notes that while the compiler blocks many impossible operations, some runtime type issues remain to support dynamic binding.

Q94.

A code reviewer wants to explain the compiler's security-related role to a beginner. Which example best reflects that role?

A) Preventing code from invoking a private method it should not access ✓ Correct

B) Adding random numbers to arrays for safer indexing

C) Printing output on separate lines with println

D) Automatically changing all while loops into for loops

Rationale: The chapter describes the compiler as preventing certain access violations, such as attempts to call private methods improperly.

Q95.

A developer is preparing a training slide on Java versioning and asks what changed beginning with Java SE 9. Which answer is best?

A) Java stopped using compilers and became purely interpreted

B) Java adopted a rapid release model with more predictable version numbering ✓ Correct

C) Java merged Java ME and Java SE into a single device-only platform

D) Java returned permanently to the J2SE 1.x numbering scheme

Rationale: The chapter states that starting with Java SE 9, Java moved to a rapid release model with more stable and predictable version numbers.

Q96.

A student is creating a simple loop and writes x = x + 1; inside the block. In the context of the chapter, what purpose does this most often serve?

A) It converts x into a String

B) It updates loop state so the condition may eventually become false ✓ Correct

C) It declares x for the first time

D) It starts a new class file

Rationale: Incrementing or otherwise changing the loop variable commonly helps the loop reach termination.

Head First Java 3rd edition Sierra Test Bank

Q97.

A developer wants to reassure a manager that Java is used beyond desktop programs. Which chapter-based example would best support that point?

A) Java is limited to command-line math programs only

B) Java has versions used in devices such as phones, ATMs, security systems, and other embedded contexts ✓ Correct

C) Java runs only where there is no network connectivity

D) Java can be used only in web applets from the 1990s

Rationale: The chapter describes Java running in many device categories, including mobile and embedded systems.

Q98.

A learner is told to diagnose a source file that compiles but runs forever because x starts at 1 and the loop condition is while (x < 10), yet x never changes. What is the best fix?

A) Replace x < 10 with x == 10

B) Add an update such as x = x + 1 inside the loop ✓ Correct

C) Move the loop outside the class

D) Change int x to String x

Rationale: Updating x inside the loop allows the condition x < 10 eventually to become false.

Q99.

A developer is building a beginner-friendly Java example and wants to demonstrate declarations, assignments, method calls, loops, and branching in one place. According to the chapter, where is the most appropriate place to put those statements for startup behavior?

A) Inside the main method of a class ✓ Correct

B) Directly between source file headers

C) Inside the JVM installation directory

D) Only inside a catch block

Rationale: The chapter explains that program execution starts in main, where normal statements such as declarations, loops, and conditionals can be placed.

Q100.

A junior programmer is asked to summarize the respective operational roles of the compiler and the JVM in Java execution. Which summary is most accurate?

A) The compiler runs programs, and the JVM only checks punctuation

B) The compiler translates source and catches many problems early, while the JVM loads and runs bytecode ✓ Correct

C) The compiler and JVM are interchangeable names for the same tool

D) The JVM writes source code, and the compiler executes private methods

Rationale: The compiler produces bytecode and performs many checks, while the JVM is responsible for loading and executing the compiled bytecode.

Head First Java 3rd edition Sierra Test Bank

Q101.

A developer claims Java's portability means the same source file can execute directly on every device without any intermediate step. Which response best evaluates this claim based on the chapter's execution model?

A) The claim is correct because the JVM reads .java source files directly on all platforms.

B) The claim is incomplete because source code is typically compiled by javac into bytecode, which is then run by a JVM on each platform. ✓ Correct

C) The claim is false because Java programs must be rewritten for each operating system before deployment.

D) The claim is correct only when the application contains a single class with no methods besides main.

Rationale: Java portability is achieved by compiling source into bytecode that platform-specific JVMs execute.

Q102.

A student writes a Java source file containing top-level statements and a while loop not enclosed in any method, arguing that the JVM should still find and run them. What is the most accurate evaluation?

A) The code should compile because loops may appear directly inside a class body.

B) The code should compile only if the file name matches the variable used in the loop.

C) The code will not compile because executable statements such as while loops must be inside a method. ✓ Correct

D) The code will run if the class contains at least one instance variable declaration.

Rationale: In Java, statements like loops and method calls must appear inside methods, not directly in the class body.

Q103.

Which scenario best demonstrates the distinct roles of the Java compiler and the JVM as described in the chapter?

A) The compiler executes bytecode while the JVM writes source code.

B) The compiler converts source code to bytecode, and the JVM loads the class and runs its main method. ✓ Correct

C) The compiler and JVM both independently run the same .java file at runtime.

D) The JVM checks only comments and whitespace, while the compiler manages memory.

Rationale: The chapter explains that javac creates bytecode and the JVM later loads and executes the compiled class.

Q104.

A team is reviewing why Java adopted bytecode compilation rather than relying on source interpretation alone at runtime. Which rationale best synthesizes the chapter's explanation?

A) Bytecode compilation was chosen primarily so comments could be preserved for the JVM.

B) Bytecode compilation was chosen to reduce the need for classes and methods.

C) Bytecode compilation was chosen partly to avoid the much slower performance of translating raw source directly at runtime. ✓ Correct

D) Bytecode compilation was chosen so Java programs would require no virtual machine.

Rationale: The chapter states that pure runtime interpretation of source would make Java run far too slowly.

Head First Java 3rd edition Sierra Test Bank

Q105.

A novice says, 'Since Java is object-oriented, every class in an application must define its own main method.' Which critique is most accurate?

A) Correct, because every class must be independently executable.

B) Incorrect, because an application needs at least one main method, but many classes may have none. ✓ Correct

C) Correct, unless the classes contain only String variables.

D) Incorrect, because Java applications never use main methods after compilation.

Rationale: The chapter notes that a Java program may use many classes but only needs one main method to start execution.

Q106.

Which proposed fix best addresses the logical error in a while loop that never changes the variable used in its condition?

A) Replace the semicolon after the loop with a comma.

B) Add a statement inside the loop that changes the tested variable so the condition can eventually become false. ✓ Correct

C) Move the loop outside the class definition.

D) Rename the loop variable to match the class name.

Rationale: A while loop that never changes its controlling condition can run forever unless the tested value is updated.

Q107.

A student compares the statements x = 4; and x == 4 inside Java code. Which interpretation is correct?

A) Both forms assign the value 4 to x.

B) The single equals tests equality, while the double equals assigns a value.

C) The single equals assigns a value, while the double equals tests equality. ✓ Correct

D) Both forms are interchangeable inside conditionals.

Rationale: In Java, '=' performs assignment and '==' performs an equality comparison.

Q108.

A programmer coming from another language writes while (x) { } where x is an int. How should this be evaluated in Java?

A) It is valid because any nonzero int is treated as true.

B) It is valid only inside main.

C) It is invalid because Java requires a boolean expression in a conditional test. ✓ Correct

D) It is invalid only when x is greater than 1.

Rationale: Java does not treat integers as booleans; loop conditions must evaluate to true or false.

Head First Java 3rd edition Sierra Test Bank

Q109.

A faculty member asks students to explain why while (z == 17) will not execute when z was previously assigned 27. Which explanation best reflects conceptual understanding?

A) The loop fails because Java compares only Strings inside while conditions.

B) The loop does not execute because the boolean test is false before the first iteration. ✓ Correct

C) The loop does not execute because while loops always require at least one pass.

D) The loop fails because z must be declared inside the loop block.

Rationale: A while loop runs only when its condition is true at the moment the condition is checked.

Q110.

Which statement best evaluates the chapter's discussion of Java's historical performance and current trade-offs?

A) Java remains slower than most modern languages and uses very little memory.

B) Java is presented as now being very fast, though it generally uses more memory than C or Rust. ✓ Correct

C) Java is now faster than all compiled languages and uses less memory than Python.

D) Java's speed has not changed meaningfully since its initial public release.

Rationale: The chapter describes Java as much faster than before but more memory-hungry than C and Rust.

Q111.

A source file contains one class definition, several methods, and statements inside those methods. Which structural summary best matches the chapter?

A) Put methods in source files, classes in methods, and statements in comments.

B) Put statements in classes, methods in statements, and classes in arrays.

C) Put a class in a source file, methods in a class, and statements in a method. ✓ Correct

D) Put a source file in a class, arrays in a method, and loops in the JVM.

Rationale: The chapter explicitly summarizes Java structure as class in source file, methods in class, statements in method.

Q112.

A student says that because whitespace 'doesn't matter,' line breaks can be inserted anywhere, including in the middle of a quoted String literal. Which evaluation is most accurate?

A) Correct, because Java ignores all whitespace in every context.

B) Correct, but only when using println instead of print.

C) Incorrect, because arbitrary whitespace is often tolerated, but breaking a String literal across lines as typed will prevent compilation. ✓ Correct

D) Incorrect only when arrays are involved.

Rationale: The chapter notes that most whitespace does not matter, but warns not to hit return before closing a quoted String.

Head First Java 3rd edition Sierra Test Bank

Q113.

Which option best explains why the chapter introduces both older coding styles and newer alternatives?

A) Because older styles are required for the JVM to locate main.

B) Because real-world Java code spans many years, so learners will encounter both legacy and modern code. ✓ Correct

C) Because newer Java code cannot be compiled with javac.

D) Because older API classes always perform better than newer ones.

Rationale: The chapter explains that learners are likely to encounter both old and new Java code in practice.

Q114.

A developer wants each printed item to appear on a separate line in console output. Which choice best supports that requirement?

A) Use System.out.print because it automatically appends a newline.

B) Use System.out.println because it inserts a newline after printing. ✓ Correct

C) Use either print or println because both behave identically.

D) Use Math.random because newline behavior is determined at runtime.

Rationale: println prints the text and then adds a newline, unlike print.

Q115.

A reviewer examines the line int z = Integer.parseInt(num); where num is the String "8". What does this line primarily illustrate?

A) Converting a String representation of a number into an int ✓ Correct

B) Declaring an array of integers from a String

C) Comparing two numeric Strings for equality

D) Printing an int without using System.out

Rationale: Integer.parseInt converts a numeric String such as "8" into the corresponding int value.

Q116.

Which critique best applies to a student's statement that a Java source file must contain multiple class definitions to compile successfully?

A) It is correct because a source file is only valid when it contains several classes.

B) It is incorrect because the chapter presents a source file as holding one class definition. ✓ Correct

C) It is correct only when the class contains a while loop.

D) It is incorrect because Java source files cannot contain any class definitions.

Rationale: The chapter states that a source code file with a .java extension holds one class definition.

Q117.

A programmer wants to generate a random valid index for an array named pets. If the chapter's approach is followed, which expression is most appropriate?

A) (int) Math.random() + pets.length

B) (int) (Math.random() * pets.length) ✓ Correct

C) Math.random(pets.length)

D) pets.length * pets.length

Rationale: Multiplying Math.random() by the array length and casting to int yields a valid zero-based index range.

Head First Java 3rd edition Sierra Test Bank

Q118.

Why does the Phrase-O-Matic program query each array's length before selecting random elements?

A) Because Java arrays require length to be printed before use.

B) Because the program must know the upper bound for generating valid random indexes. ✓ Correct

C) Because array length determines whether Strings need quotation marks.

D) Because arrays cannot be concatenated without first storing their lengths.

Rationale: The array length is used to generate random indexes that stay within valid bounds.

Q119.

A student argues that because Java is strongly typed, every type-related problem must be detected before runtime. Which evaluation best reflects the chapter's nuanced explanation?

A) Correct, because strong typing eliminates all runtime type issues.

B) Incorrect, because the compiler catches many type errors, but some type-related exceptions can still arise at runtime. ✓ Correct

C) Correct, because the JVM never checks types once bytecode is loaded.

D) Incorrect, because Java does not perform compile-time type checking.

Rationale: The chapter explains that the compiler blocks most type violations, but some runtime type exceptions still occur.

Q120.

Which conclusion best synthesizes the chapter's explanation of why the JVM still performs checks even after compilation?

A) Because the compiler never checks syntax or access rules.

B) Because bytecode might be altered after compilation, so runtime verification still matters. ✓ Correct

C) Because the JVM must recompile source code before every loop iteration.

D) Because Java does not support private methods.

Rationale: The chapter notes that the JVM also checks security and correctness in case bytecode was changed after compilation.

Q121.

A student writes a class with public static void main(String[] args) and asks why the JVM begins there rather than in another method. Which answer is most accurate?

A) Because main is the specially recognized entry point the JVM looks for when starting an application. ✓ Correct

B) Because main is always the only method allowed in a class.

C) Because methods named main execute before compilation.

D) Because main is required in every class used by the application.

Rationale: The JVM starts an application by locating and invoking the specially defined main method.

Head First Java 3rd edition Sierra Test Bank

Q122.

A learner says that Java's rapid release model made version numbers more stable and predictable beginning with Java SE 9. How should this be judged?

A) Accurate according to the chapter ✓ Correct

B) Inaccurate because version numbering became less predictable after Java SE 9

C) Inaccurate because rapid release ended in 2017

D) Accurate only for Java ME, not Java SE

Rationale: The chapter states that since Java SE 9, version numbers have become more stable and predictable under rapid release.

Q123.

Which observation best evaluates the BeerSong example's remaining flaw after beerNum becomes 1?

A) The program stops too early because while cannot test integers.

B) The program risks a compile error because println cannot print Strings and ints together.

C) The output can become grammatically inconsistent because the word variable is not corrected after decrementing from 2 to 1 before the next wall line. ✓ Correct

D) The program cannot reach the else block after the decrement.

Rationale: After decrementing from 2 to 1, the code may still use the plural word value, producing incorrect singular output.

Q124.

A code review finds while (x < 10) { if (x > 3) { System.out.println("big x"); } } with x initialized to 1. What is the best assessment?

A) It compiles and terminates normally after printing once.

B) It fails compilation because if statements cannot be nested inside while loops.

C) It compiles but creates an infinite loop because x is never updated within the loop. ✓ Correct

D) It fails compilation because x must be declared inside the while block.

Rationale: Since x remains 1, the condition x < 10 stays true forever and the loop never terminates.

Q125.

A student submits a file containing only a main method declaration with no surrounding class. What is the most appropriate evaluation?

A) Valid, because main can exist as a top-level program block in Java.

B) Invalid, because methods must be declared inside a class. ✓ Correct

C) Valid only if the file is named Main.java.

D) Invalid only when String[] args is omitted.

Rationale: Java requires methods, including main, to be defined within a class.

Q126.

Consider a class body that contains int x = 5; followed immediately by a while loop and print statements, with no method wrapping them. What is the key reason it fails?

A) The variable x cannot be initialized in a class.

B) The while loop must be inside a method rather than directly in the class body. ✓ Correct

C) System.out.println may only be used in static contexts.

D) A class may not contain both fields and loops.

Rationale: Executable loop code cannot sit directly in a class body; it must be placed inside a method.

Head First Java 3rd edition Sierra Test Bank

Q127.

A student must fill blanks so that a loop prints DooBeeDooBeeDo with x starting at 1. Which completed logic is most defensible?

A) while (x < 2), print/print, if (x == 1)
B) while (x < 3), print/println, if (x == 2)
C) while (x < 3), print/print, if (x == 3) ✓ Correct
D) while (x < 4), println/print, if (x == 4)

Rationale: Two loop iterations print DooBee twice on one line, and then x becomes 3 so the final if prints Do.

Q128.

A student compares if/else behavior with while behavior. Which explanation best differentiates them?

A) if/else repeats a block while a condition is true, whereas while chooses between two branches once.
B) Both execute identically except for comment syntax.
C) while can repeat a block as long as its condition stays true, whereas if/else selects among alternatives based on a condition at that point. ✓ Correct
D) if/else may only be used inside main, but while may be used anywhere.

Rationale: A while loop can repeat, while if/else performs conditional branching at a specific moment.

Q129.

A developer says that because arrays are zero-based, a 14-element array has valid indexes 1 through 14. What is the most accurate correction?

A) Valid indexes are 0 through 13. ✓ Correct
B) Valid indexes are 1 through 13.
C) Valid indexes are 0 through 14.
D) Valid indexes depend on whether the array stores Strings or ints.

Rationale: Zero-based indexing means the first element is at 0 and the last in a 14-element array is at 13.

Q130.

When building the Phrase-O-Matic output, what is the primary role of the + operator in the expression that forms the phrase?

A) It compares Strings for equality.
B) It concatenates String values into one larger String. ✓ Correct
C) It converts arrays into integers.
D) It forces random numbers to become zero-based.

Rationale: In the phrase-building expression, + joins multiple Strings together into one output String.

Q131.

A developer wants to maximize cross-device deployment for small embedded and mobile systems in the chapter's context. Which platform choice is most appropriate?

A) Java ME ✓ Correct
B) Java SE only
C) Raw bytecode without any Java platform
D) A source-only deployment with no JVM

Rationale: The chapter identifies Java Platform, Micro Edition as a platform for embedded and mobile devices.

Head First Java 3rd edition Sierra Test Bank

Q132.

A student says Java's insistence that code be placed in classes is merely an arbitrary formatting rule. Which response best evaluates that claim?

A) It is arbitrary because the compiler only cares about semicolons.

B) It is inaccurate because Java is designed as an object-oriented language in which classes are foundational. ✓ Correct

C) It is accurate for Java SE but not Java ME.

D) It is accurate because methods, not classes, are the true units of Java programs.

Rationale: The chapter ties the class requirement to Java's object-oriented design.

Q133.

A code sample includes try { readTheFile("myFile.txt"); } catch(FileNotFoundException ex) { System.out.print("File not found."); } What concept is most directly illustrated?

A) Loop termination

B) Exception handling for a specific problem during file access ✓ Correct

C) Array indexing

D) Object construction with new

Rationale: The try/catch block demonstrates handling a FileNotFoundException during file reading.

Q134.

A student reviewing conditional syntax asks which form is required for the test expression in a while loop. Which answer is best?

A) The test must be placed in square brackets.

B) The test must be placed in parentheses and evaluate to boolean. ✓ Correct

C) The test must be placed after a semicolon.

D) The test may be omitted if the loop block uses braces.

Rationale: The chapter states that a boolean test goes inside parentheses in a while loop.

Q135.

Which recommendation best addresses the chapter's note about typing long String literals from printed examples into an editor?

A) Insert line breaks inside the quoted text wherever the page wraps the line.

B) Remove all hyphens because Java Strings cannot contain them.

C) Allow the editor to wrap visually, but do not press return until after closing the String literal. ✓ Correct

D) Replace quotation marks with parentheses during entry, then restore them before compiling.

Rationale: The chapter warns not to hit return while typing a quoted String or the code will not compile.

Head First Java 3rd edition Sierra Test Bank

Q136.

A student is asked to distinguish a declaration from an assignment. Which pair best demonstrates that distinction?

A) int weight; and x = x + 1; ✓ Correct

B) while (x > 3) and if (x == 3)

C) System.out.print("Hello") and System.out.println("Hello")

D) Dog myDog and new Dog(name, size)

Rationale: int weight; declares a variable, while x = x + 1; assigns a value to one.

Q137.

Which statement best evaluates the chapter's portrayal of Java's age and code ecosystem?

A) Most Java code in use today was written after Java SE 9, so older styles are rarely encountered.

B) Java is relatively new, so backward compatibility is not a practical concern.

C) Java has been around for decades, so programmers are likely to encounter both older and newer code styles. ✓ Correct

D) Java source from older versions cannot be understood without rewriting it in Kotlin.

Rationale: The chapter emphasizes Java's long history and the likelihood of encountering both legacy and modern code.

Q138.

A learner says comments in Java change how the JVM executes the surrounding statements. Which response is most accurate?

A) True, because comments are compiled into bytecode control markers.

B) False, because comments are for humans and are not executable statements. ✓ Correct

C) True only for single-line comments beginning with //.

D) False only when comments appear inside main.

Rationale: Comments document code for readers and are not executed as part of the program logic.

Q139.

Which option best explains why the chapter's Loopy example increments x inside the while block?

A) To satisfy the requirement that every statement in Java end with a semicolon

B) To ensure the loop condition can eventually become false and execution can continue past the loop ✓ Correct

C) To convert x from an int to a boolean

D) To allow println to insert a newline

Rationale: Incrementing x changes the tested value so the loop can terminate once the condition is no longer true.

Q140.

A student proposes replacing public static void main(String[] args) with public void main(String[] args) in the startup class while expecting normal application launch. Based on the chapter, what is the best evaluation?

A) It should still work because the JVM looks for any method named main.

B) It should still work if the class contains only one method.

C) It is unreliable because the JVM looks for a specially written main signature exactly as described. ✓ Correct

D) It will work only when invoked through javac rather than the JVM.

Rationale: The chapter says the JVM searches for a specially written main method with the expected form.

Head First Java 3rd edition Sierra Test Bank

Q141.

A team is deciding whether to hand-author bytecode instead of writing Java source. Which evaluation best aligns with the chapter's reasoning?

A) It is generally practical because bytecode is easier for humans to maintain than source code.

B) It is theoretically possible but impractical, much like writing low-level output formats by hand. ✓ Correct

C) It is impossible because the JVM refuses bytecode not generated by javac.

D) It is preferred when dynamic binding is required.

Rationale: The chapter notes that hand-writing bytecode is theoretically possible but absurd in practice.

Q142.

Which example most clearly reflects the chapter's description of the compiler as a first line of defense?

A) Stopping a programmer from invoking a private method from unauthorized code ✓ Correct

B) Scheduling coffee after a snooze signal

C) Choosing a random array element at runtime

D) Printing output on separate lines with println

Rationale: The chapter describes the compiler as preventing access violations such as improper use of private methods.

Q143.

A student asks why some type flexibility must remain until runtime in Java. Which answer best synthesizes the chapter's explanation?

A) Because Java does not support compile-time type checking at all

B) Because dynamic binding allows programs to work with objects not known to the original programmer at compile time ✓ Correct

C) Because arrays cannot be checked by the compiler

D) Because the JVM ignores object types once execution begins

Rationale: The chapter links some runtime flexibility to dynamic binding and objects introduced at runtime.

Q144.

A novice wants to know whether the line System.out.print("Dog: " + name); demonstrates arithmetic addition or something else. Which response is best?

A) It demonstrates subtraction because Strings cannot use +.

B) It demonstrates concatenation, joining a literal and a variable into one printed String. ✓ Correct

C) It demonstrates equality testing between two Strings.

D) It demonstrates conversion of name into an array.

Rationale: When used with Strings, the + operator joins text values together.

Head First Java 3rd edition Sierra Test Bank

Q145.

A code reviewer sees int[] numList = {2,4,6,8}; and asks what concept this line primarily introduces. Which answer is best?

A) A declaration and initialization of an int array ✓ Correct

B) A while loop with four iterations

C) A class constructor call

D) An exception handler for numbers

Rationale: The line creates and initializes an array of int values.

Q146.

A student claims that because Java runs on a JVM, source files do not need to be compiled into .class files first. Which rebuttal best matches the chapter?

A) Correct, because the JVM accepts only .java files.

B) Incorrect, because the typical process is to compile .java source into .class bytecode before running. ✓ Correct

C) Correct, but only for Java ME devices.

D) Incorrect, because Java source becomes machine code directly with no intermediate form.

Rationale: The chapter describes typing a .java file, compiling it, and then running the resulting bytecode on the JVM.

Q147.

A faculty exam item asks students to reason about why one class in a multi-class program is specified at the command line. Which answer is best?

A) Because the JVM must know which class to load first so it can locate that class's main method. ✓ Correct

B) Because only one class may exist in a Java application.

C) Because all other classes are ignored during execution.

D) Because specifying a class name tells javac which variables are booleans.

Rationale: The JVM is directed to load a particular class and begin execution at its main method.

Q148.

A student says the chapter presents Java as the fastest language available and therefore superior in every performance dimension. Which evaluation is most accurate?

A) Accurate, because Java is described as faster than C and Rust and more memory efficient.

B) Inaccurate, because the chapter says Java is very fast but not the fastest, and it uses comparatively more memory than C and Rust. ✓ Correct

C) Accurate, because performance and memory use are described as identical across modern languages.

D) Inaccurate only because Java is slower than Python.

Rationale: The chapter presents Java as very fast but not the fastest, with higher memory use than C and Rust.

Head First Java 3rd edition Sierra Test Bank

Q149.

A student is debugging output formatting and notes that several messages are appearing on a single line unexpectedly. Which action is most likely to fix the issue with minimal logic change?

A) Replace selected System.out.print calls with System.out.println calls where line breaks are desired. ✓ Correct

B) Add extra semicolons after each print statement.

C) Move the print statements outside main.

D) Convert all Strings to ints before printing.

Rationale: println adds a newline, so substituting it where needed changes formatting without altering core logic.

Q150.

You are evaluating two beginner programs for maintainability and correctness. Program A includes a valid class, a correctly formed main method, a while loop with a boolean condition, and updates to the loop variable. Program B includes valid statements but places the loop directly in the class body and relies on an int alone as the condition. Which judgment is best?

A) Program B is preferable because it is shorter and Java treats ints as booleans.

B) Both programs are equally valid because Java ignores structure if the statements are correct.

C) Program A is preferable because it follows Java's required structure and uses a legal boolean loop test. ✓ Correct

D) Neither program is valid because Java requires a main method in every class.

Rationale: Program A obeys Java's structural rules and boolean-condition requirement, while Program B violates both.

Head First Java 3rd edition Sierra Test Bank