Trigonometry A Right Triangle Approach 1st edition Larson Test Bank

SKU: 9780357381809-TEST-BANK

Section 1.1 - Angles, Degree Measure, and Special Triangles

1. Find the quadrant in which the given angle lies.

116°

a. Quadrant I
b. Quadrant IV
c. Quadrant III
d. Quadrant II
e. None of the above

ANSWER: d
POINTS: 1
REFERENCES: 4.1.41a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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2. Find the quadrant in which the given angle lies.

–13°

a. Quadrant I
b. Quadrant II
c. Quadrant IV
d. Quadrant III
e. None of the above

ANSWER: c
POINTS: 1
REFERENCES: 4.1.44b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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3. Find the complement of the following angle.

14°

a. Complement: 242°
b. Complement: 14°
c. Complement: 76°
d. Complement: 166°
e. Complement: 77°

ANSWER: c

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POINTS: 1
REFERENCES: 4.1.53a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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4. Find the supplement of the following angle.

148°

a. Supplement: 212°
b. Supplement: 148°
c. Supplement: 32°
d. Supplement: 58°
e. Supplement: 33

ANSWER: c
POINTS: 1
REFERENCES: 4.1.54b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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5. In a right triangle, one acute angle is 38° less than the other acute angle. Find the unknown angles of the triangle.

a. 64°, 26°
b. 45°, 45°
c. 59°, 21°
d. 49°, 11°
e. 65°, 25°

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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6. In an acute triangle, $\angle A$ is 80° and $\angle B$ is 3 times the sum of $\angle C$ and 12°. Find the unknown angles of the triangle.

a. 16°, 84°
b. 44°, 56°
c. 14°, 76°

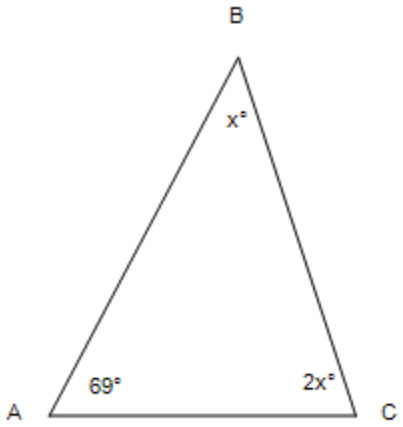
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d. 72°, 12°
e. 9°, 91°

ANSWER: a
POINTS: 1
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7. Find the unknown angle measures.



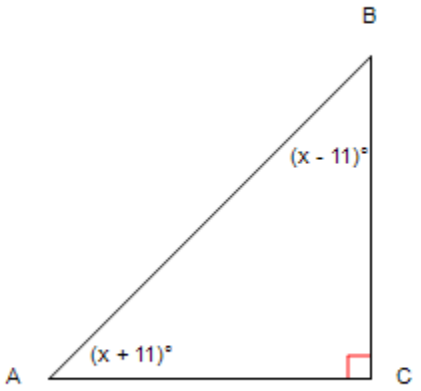
a. $\angle B = 37^\circ, \angle C = 74^\circ$
b. $\angle B = 74^\circ, \angle C = 37^\circ$
c. $\angle B = 7^\circ, \angle C = 14^\circ$
d. $\angle B = 60^\circ, \angle C = 30^\circ$
e. $\angle B = 40^\circ, \angle C = 20^\circ$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
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8. Find the unknown angle measures.

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a. $\angle A = 56^\circ, \angle B = 34^\circ$
b. $\angle A = 34^\circ, \angle B = 56^\circ$
c. $\angle A = 51^\circ, \angle B = 29^\circ$
d. $\angle A = 49^\circ, \angle B = 27^\circ$
e. $\angle A = 45^\circ, \angle B = 45^\circ$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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9. In a right triangle, one acute angle is 44 times the other acute angle. Find the unknown angles of the triangle.

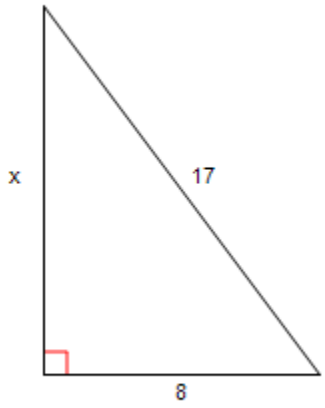
a. 2°, 88°
b. 81°, 9°
c. 82°, 8°
d. 4°, 86°
e. 11°, 79°

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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10. Solve for x in the right triangle.

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a. $x = 15$
b. $x = 18$
c. $x = 19$
d. $x = 12$
e. $x = 10$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 6/29/2021 11:21 AM
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11. The length of the hypotenuse is x, the length of the legs are 23 and $x - 1$. Solve for x in the right triangle.

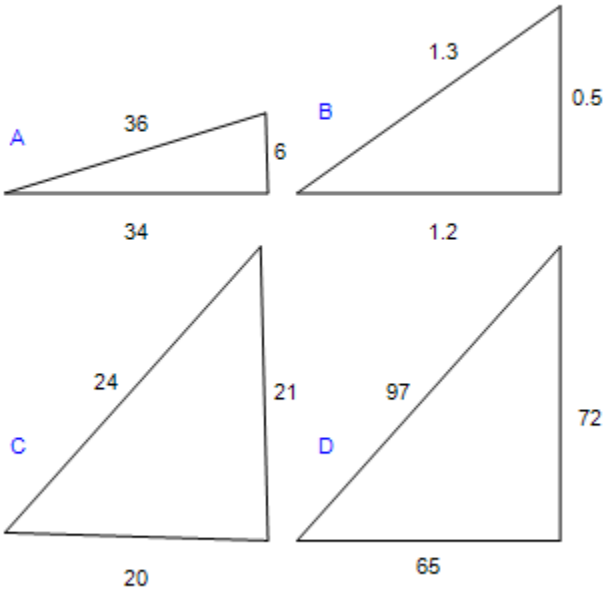
a. $x = 265$
b. $x = 267$
c. $x = 268$
d. $x = 263$
e. $x = 262$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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12. Determine which of the triangles is a right triangle.

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a. B and D
b. A, B and C
c. C
d. B, C, and D
e. D

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 6/29/2021 12:14 PM
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13. Determine which of the integers are a Pythagorean triple.

a. 84, 13, 85
b. 82, 13, 85
c. $1, 2, 3$
d. 82, 13, 75
e. 74, 13, 95

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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14. The length of the hypotenuse is $3x + 3$ the length of the legs are x and $3x - 3$. Solve for x in the right triangle.

a. $x = 36$
b. $x = 37$
c. $x = 41$
d. $x = 34$
e. $x = 31$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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15. The hypotenuse of a 45°-45°-90° triangle is $14\sqrt{2}$. Find the remaining sides of the special right triangle.

a. $14, 14$
b. $\sqrt{2}, \sqrt{2}$
c. $28\sqrt{2}, 28\sqrt{2}$
d. $28, 28$
e. $14, 28\sqrt{2}$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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16. Either leg of a 45°-45°-90° triangle is $\sqrt{74}$. Find the hypotenuse of the special right triangle.

a. $2\sqrt{37}$
b. $\sqrt{37}$
c. 37
d. 74
e. 148

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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17. The longer leg of a 30°-60°-90° triangle is 27. Find the remaining sides of the special right triangle.

a. another leg: $9\sqrt{3}$
hypotenuse: $18\sqrt{3}$

b. another leg: $18\sqrt{3}$
hypotenuse: $36\sqrt{3}$

c. another leg: $27\sqrt{3}$
hypotenuse: $54\sqrt{3}$

d. another leg: $27\sqrt{3}$
hypotenuse: 54

e. another leg: $9\sqrt{3}$
hypotenuse: 18

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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18. The hypotenuse of a 30°-60°-90° triangle is 24. Find the remaining sides of the special right triangle.

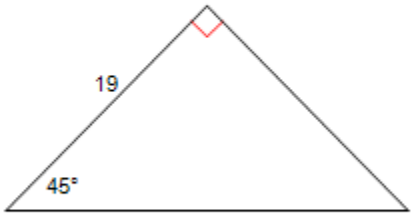
a. $12, 12\sqrt{3}$
b. $12\sqrt{3}, 12\sqrt{3}$
c. $12, 12\sqrt{2}$
d. $12, 12$
e. $24, 12$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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19. Find the remaining sides of the special right triangle.

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a. another leg: 19
hypotenuse: $19\sqrt{2}$

b. another leg: $19\sqrt{2}$
hypotenuse: 19

c. another leg: $19\sqrt{2}$
hypotenuse: $19\sqrt{3}$

d. another leg: $19\sqrt{3}$
hypotenuse: 38

e. another leg: 19
hypotenuse: 38

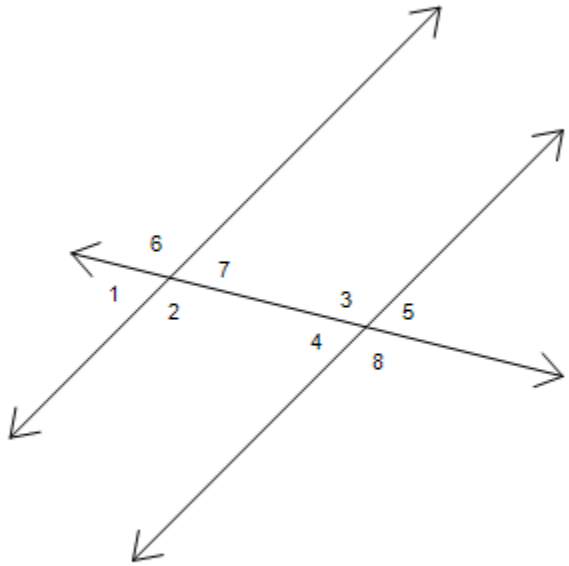
ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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Section 1.2 - Similar Triangles

1. Identify all pairs of numbered angles in the figure that are vertical.



a. 6 and 2, 7 and 1, 3 and 8, 5 and 4
b. 6 and 3, 7 and 5, 1 and 4, 2 and 8
c. 7 and 4, 3 and 2
d. 6 and 8, 5 and 1
e. 7 and 3, 2 and 4

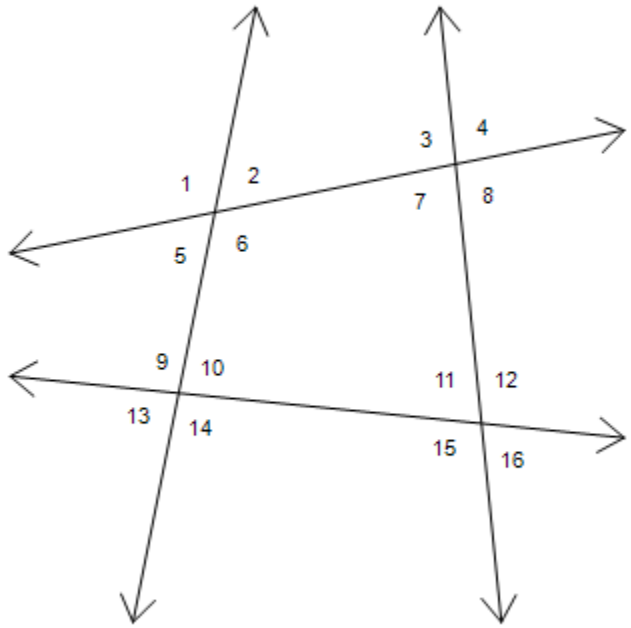
ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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2. Classify the pair of angles $\angle 6$ and $\angle 10$.

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Section 1.2 - Similar Triangles



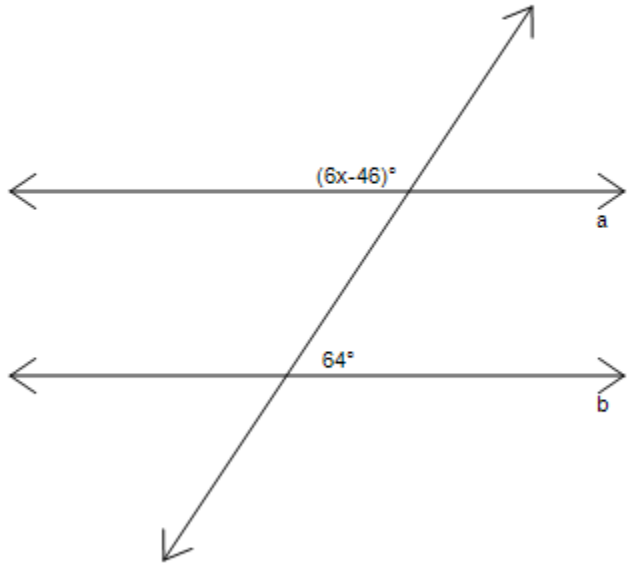
a. consecutive interior
b. vertical
c. alternate interior
d. alternate exterior
e. corresponding

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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3. Find the value of variable x in the figure, given that line a is parallel to line b.

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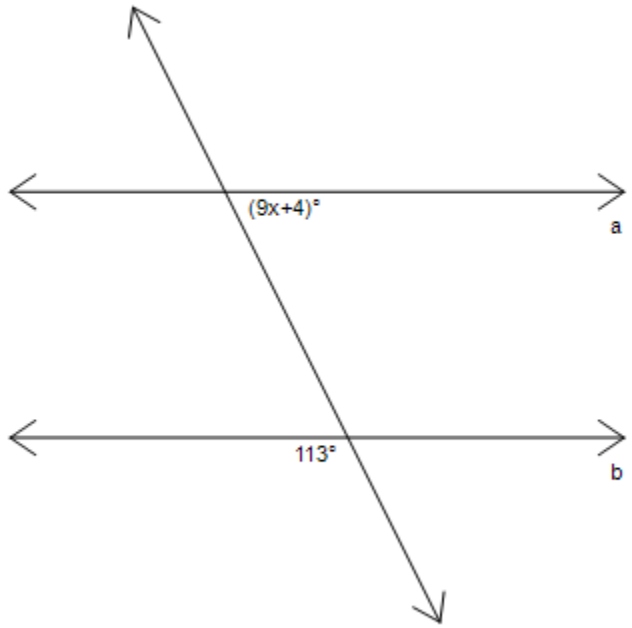
a. $x = 12$
b. $x = 18.3$
c. $x = 66$
d. $x = 33.3$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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4. Find the value of variable x in the figure, given that line a is parallel to line b.

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a. $x = 7$
b. $x = 12.1$
c. $x = 27$
d. $x = -3$

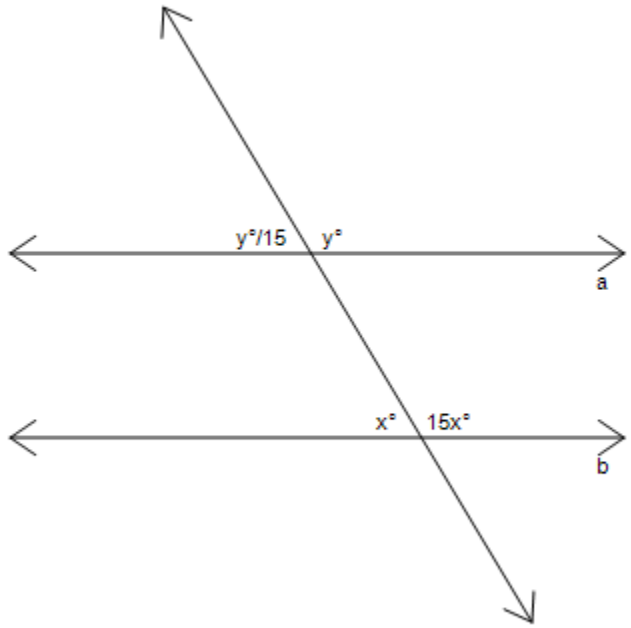
ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/27/2021 4:35 AM
DATE MODIFIED: 5/28/2021 5:14 AM

5. Find the value of variables x and y in the figure, given that line a is parallel to line b.

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Section 1.2 - Similar Triangles



a. $x = 11.3°; y = 168.8°$

b. $x = 168.8°; y = 11.3°$

c. $x = 5.6°; y = 84.4°$

d. $x = 3.5°; y = 52°$

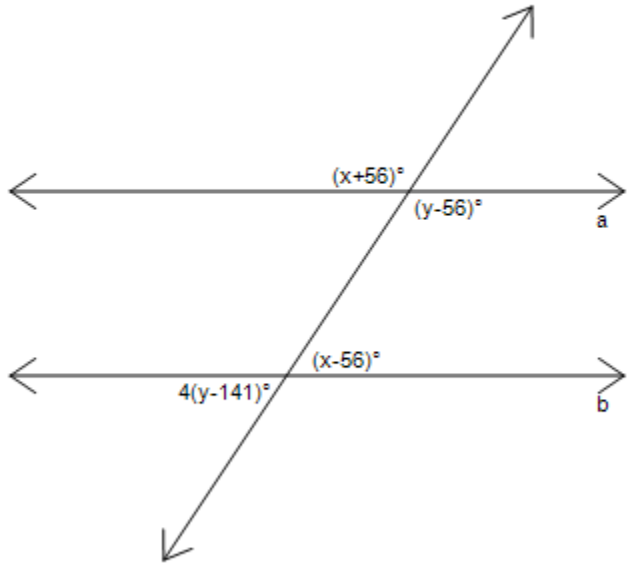
ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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6. Find the value of variables x and y in the figure, given that line a is parallel to line b.

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Section 1.2 - Similar Triangles



a. $x = 20;\ y = 132$

b. $x = y = 65.7$

c. $x = -121;\ y = -9$

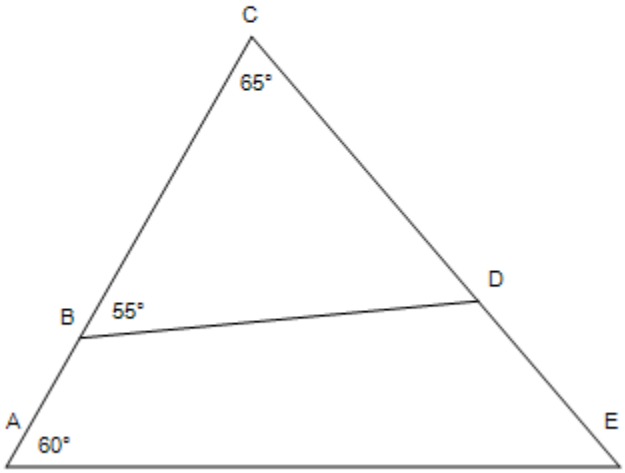
d. no solution

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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7. Determine whether the two triangles are similar. Explain your reasoning.

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a. The triangles are similar because $\angle ACE = \angle BCD$, $\angle CBD = \angle CEA$, $\angle CDB = \angle CAE$.

b. The triangles are not similar because $\angle CBD \neq \angle CAE$.

c. The triangles are similar because they have a common angle.

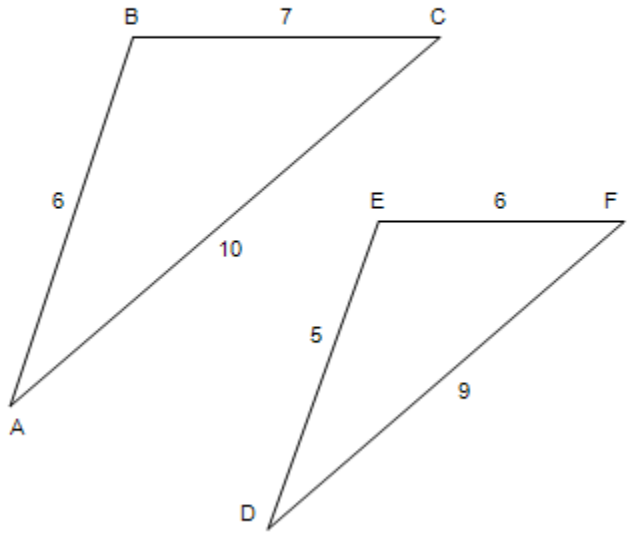
d. The triangles are not similar because the corresponding sides are not proportional.

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
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8. Determine whether the two triangles are similar. Explain your reasoning.

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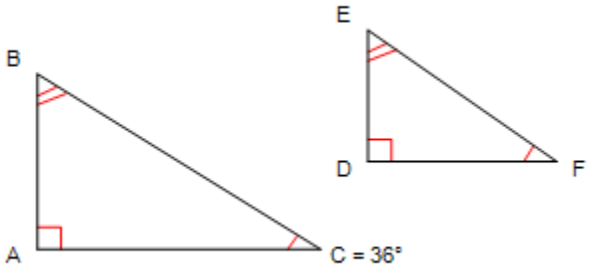
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a. The triangles are not similar because the corresponding sides are not proportional.
b. The triangles are similar because the corresponding sides are proportional.
c. The triangles are similar because the corresponding angles have the same measure.
d. The triangles are not similar because the corresponding sides are not equal.

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/26/2021 4:49 AM
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9. Triangles *ABC* and *DEF* are similar. Find the unknown angle measures.



a. $\angle A = \angle D = 90°; \angle B = \angle E = 54°; \angle C = \angle F = 36°$

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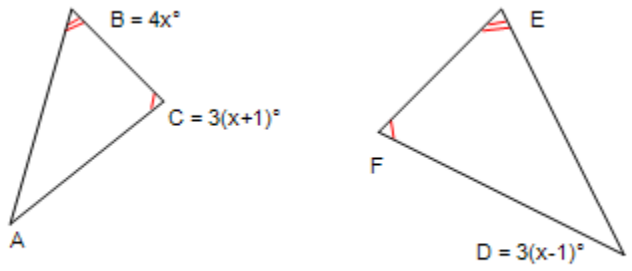
b. $\angle A = \angle D = 90°; \angle B = \angle E = 144°; \angle C = \angle F = 36°$

c. $\angle A = \angle D = 90°; \angle B = \angle E = 234°; \angle C = \angle F = 36°$

d. $\angle A = \angle D = 90°; \angle B = \angle C = \angle E = \angle F = 36°$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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10. Triangles *ABC* and *DEF* are similar. Find the unknown angle measures.



a. $\angle A = \angle D = 51°; \angle B = \angle E = 72°; \angle C = \angle F = 57°$

b. $\angle A = \angle D = 105°; \angle B = \angle E = 144°; \angle C = \angle F = 111°$

c. $\angle A = \angle D = 24°; \angle B = \angle D = 36°; \angle C = \angle F = 30°$

d. $\angle A = \angle D = \angle C = \angle F = 55.2°; \angle B = \angle D = 69.6°$

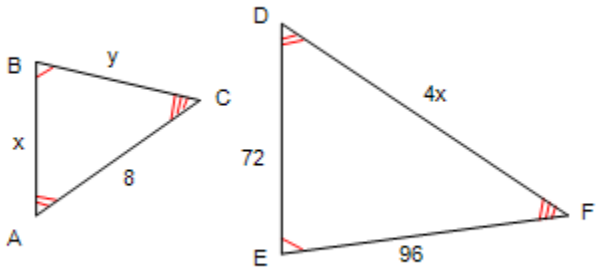
ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
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11. Triangles *ABC* and *DEF* are similar. Find the unknown side lengths.

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Section 1.2 - Similar Triangles



a. $AB = 12$; $BC = 16$; $DF = 48$

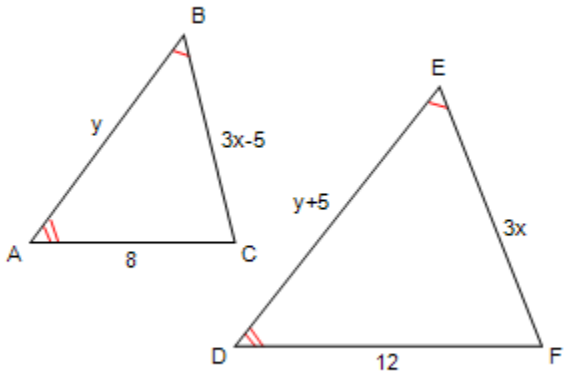
b. $AB = 16$; $BC = 12$; $DF = 48$

c. $AB = 6.0$; $BC = 2.0$; $DF = 24.0$

d. $AB = 72$; $BC = 288$; $DF = 288$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/26/2021 7:37 AM
DATE MODIFIED: 5/26/2021 10:07 AM

12. Triangles *ABC* and *DEF* are similar. Find the unknown side lengths.



a. $AB = 10$; $BC = 10$; $DE = 15$; $EF = 15$

b. $AB = 15$; $BC = 15$; $DE = 10$; $EF = 10$

c. $AB = 5$; $BC = 25$; $DE = 10$; $EF = 30$

d. $AB = 10$; $BC = 7$; $DE = 15$; $EF = 12$

ANSWER: a
POINTS: 1

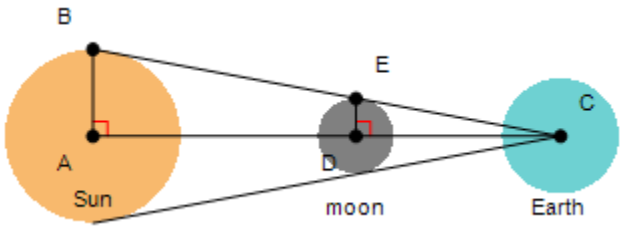
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Section 1.2 - Similar Triangles

QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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13. During a total eclipse of the Sun, the moon is aligned with the Sun (see figure). Given that the distance between Earth and the Sun is 94,000,000 miles, the distance between Earth and the moon is 234,410 miles, and the radius of the Sun is 432,690 miles, use similar triangles to estimate the radius of the moon.



a. 1,079 miles
b. 1,084 miles
c. 1,074 miles
d. 1,079 kilometers

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/27/2021 8:20 AM
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14. An adult who is 5 feet 1 inches tall casts a shadow that is 59 inches long. Find the shadow length of a 4-foot-tall child standing nearby at the same time.

a. 46.4 inches
b. 46.4 feet
c. 46.3 feet
d. 75 inches

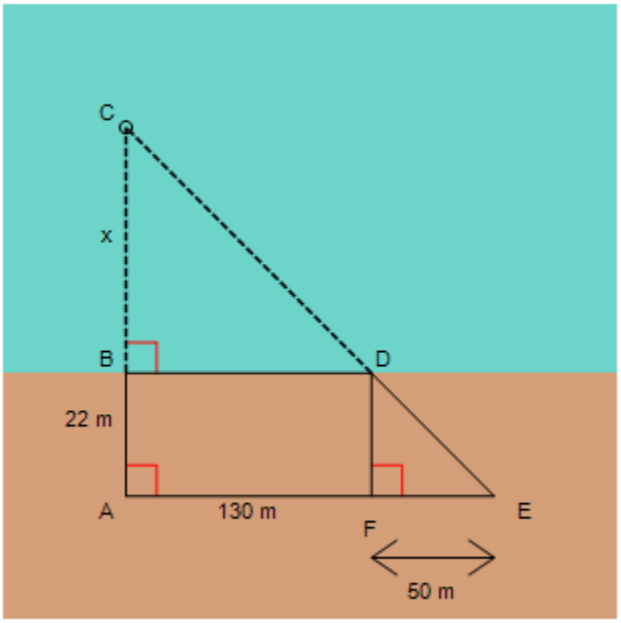
ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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15. In the diagram, which triangles would you use to find the distance x between the shoreline and the buoy C? Explain.

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Section 1.2 - Similar Triangles



a. *BCD* and *FDE* because they are similar, and the corresponding sides are proportional.
b. *ACE* and *BCD* because one of them lies inside the other.
c. *ACE* and *FDE* because one of them is a part of the other.
d. Only *BCD* because it is enough to find *x*.

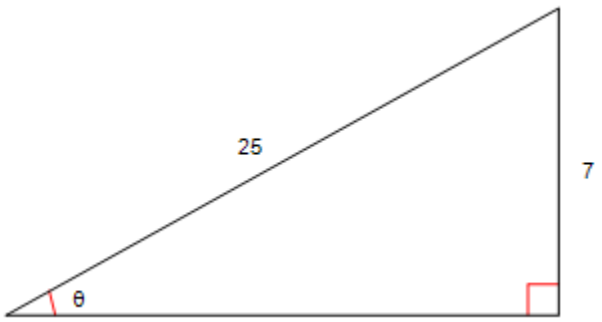
ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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Section 1.3 - Trigonometric Functions: Right Triangle Ratios

1. Find the exact values of the six trigonometric functions of the angle θ.



a. $\sin\theta = \frac{7}{25}; \cos\theta = \frac{24}{25}; \tan\theta = \frac{7}{24}; \cot\theta = \frac{24}{7}; \sec\theta = \frac{25}{7}; \csc\theta = \frac{25}{24}$

b. $\sin\theta = \frac{24}{25}; \cos\theta = \frac{7}{25}; \tan\theta = \frac{24}{7}; \cot\theta = \frac{7}{24}; \sec\theta = \frac{25}{24}; \csc\theta = \frac{25}{7}$

c. $\sin\theta = \frac{25}{7}; \cos\theta = \frac{25}{24}; \tan\theta = \frac{24}{7}; \cot\theta = \frac{7}{24}; \sec\theta = \frac{7}{25}; \csc\theta = \frac{24}{25}$

d. $\sin\theta = \frac{7}{25}; \cos\theta = \frac{24}{25}; \tan\theta = \frac{7}{24}; \cot\theta = \frac{24}{7}; \sec\theta = \frac{25}{24}; \csc\theta = \frac{25}{7}$

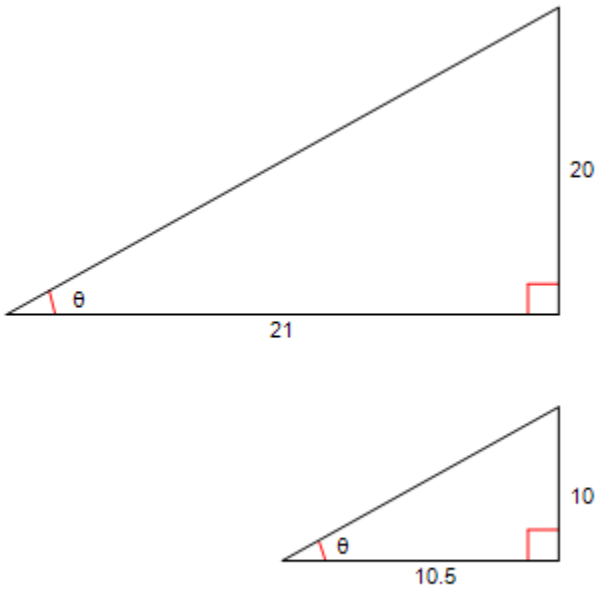
ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/27/2021 9:27 AM
DATE MODIFIED: 5/27/2021 10:53 AM

2. Find the exact values of the six trigonometric functions of the angle θ for each of the two triangles.

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Section 1.3 - Trigonometric Functions: Right Triangle Ratios



a. $\sin\theta = \frac{20}{29}; \cos\theta = \frac{21}{29}; \tan\theta = \frac{20}{21}; \cot\theta = \frac{21}{20}; \sec\theta = \frac{29}{20}; \csc\theta = \frac{29}{21}$

b. $\sin\theta = \frac{21}{29}; \cos\theta = \frac{20}{29}; \tan\theta = \frac{21}{20}; \cot\theta = \frac{20}{21}; \sec\theta = \frac{29}{21}; \csc\theta = \frac{29}{20}$

c. $\sin\theta = \frac{29}{20}; \cos\theta = \frac{29}{21}; \tan\theta = \frac{21}{20}; \cot\theta = \frac{20}{21}; \sec\theta = \frac{20}{29}; \csc\theta = \frac{21}{29}$

d. $\sin\theta = \frac{20}{29}; \cos\theta = \frac{21}{29}; \tan\theta = \frac{20}{21}; \cot\theta = \frac{21}{20}; \sec\theta = \frac{29}{21}; \csc\theta = \frac{29}{20}$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 1:47 AM
DATE MODIFIED: 5/28/2021 7:05 AM

3. Sketch a right triangle corresponding to the trigonometric function of the acute angle θ. Then find the exact values of the other five trigonometric functions of θ.

$\sec\theta = \frac{11}{10}$

a. $\sin\theta = \frac{10}{11}; \cos\theta = \frac{\sqrt{21}}{11}; \tan\theta = \frac{10}{\sqrt{21}}; \cot\theta = \frac{\sqrt{21}}{10}; \csc\theta = \frac{11}{\sqrt{21}}$

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b. $\sin\theta = \frac{\sqrt{21}}{11}; \cos\theta = \frac{10}{11}; \tan\theta = \frac{\sqrt{21}}{10}; \cot\theta = \frac{10}{\sqrt{21}}; \csc\theta = \frac{11}{\sqrt{21}}$

c. $\sin\theta = \frac{11}{10}; \cos\theta = \frac{11}{\sqrt{21}}; \tan\theta = \frac{\sqrt{21}}{10}; \cot\theta = \frac{10}{\sqrt{21}}; \csc\theta = \frac{\sqrt{21}}{11}$

d. $\sin\theta = \frac{10}{11}; \cos\theta = \frac{21}{11}; \tan\theta = \frac{10}{21}; \cot\theta = \frac{21}{10}; \csc\theta = \frac{11}{21}$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 2:24 AM
DATE MODIFIED: 5/28/2021 2:52 AM

4. Find the value of θ $(0 < \theta < 90^\circ)$ without using a calculator.

$$8\csc\theta = \frac{16\sqrt{3}}{3}$$

a. $\theta = 30^\circ$
b. $\theta = 60^\circ$
c. $\theta = 45^\circ$
d. $\theta = 35^\circ$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 3:16 AM
DATE MODIFIED: 5/28/2021 3:22 AM

5. Find the value of θ $(0 < \theta < 90^\circ)$ without using a calculator.

$$7\cos\theta = \frac{14\sqrt{3}}{3}$$

a. $\theta = 30^\circ$
b. $\theta = 60^\circ$
c. $\theta = 45^\circ$
d. no real solution

ANSWER: d
POINTS: 1
QUESTION TYPE: Multiple Choice

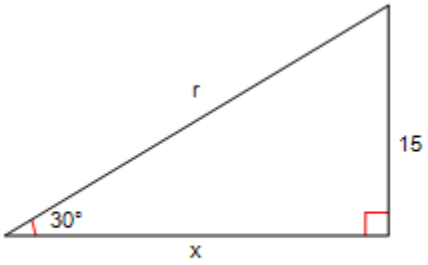
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Section 1.3 - Trigonometric Functions: Right Triangle Ratios

HAS VARIABLES: True
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6. Find the exact values of x and r.



a. $x = 5\sqrt{3}; r = 10\sqrt{3}$

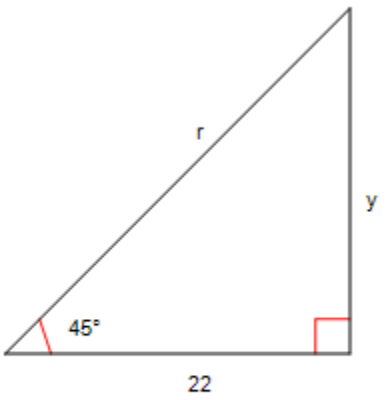
b. $x = 10\sqrt{3}; r = 5\sqrt{3}$

c. $x = 15\sqrt{3}; r = 30$

d. $x = 15; r = 15\sqrt{2}$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 3:27 AM
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7. Find the exact values of y and r.



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a. $y = 22; r = 22\sqrt{2}$

b. $y = 22\sqrt{2}; r = 22\sqrt{2}$

c. $y = 22\sqrt{2}; r = 22$

d. $y = 22; r = 44$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 7:09 AM
DATE MODIFIED: 5/28/2021 7:24 AM

8. Rewrite the trigonometric function in terms of its cofunction.

$\tan \theta = 30°$

a. $\cot \theta = 60°$

b. $\sin \theta = 60°$

c. $\cot \theta = 150°$

d. $\tan \theta = -30°$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 4:02 AM
DATE MODIFIED: 5/28/2021 4:52 AM

9. Rewrite the trigonometric function in terms of its cofunction.

$\csc \theta = 66°$

a. $\sec \theta = 24°$

b. $\sin \theta = 24°$

c. $\sec \theta = 114°$

d. $\csc \theta = -66°$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 4:49 AM
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10. Solve the equation. Assume all angles are acute.

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$\cos 3A = \sin(86° - A)$

a. $A = 2°$

b. $A = -43°$

c. $A = 47°$

d. $A = 1°$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 4:55 AM
DATE MODIFIED: 5/28/2021 5:10 AM

11. Solve the equation. Assume all angles are acute.

$\csc\left(\frac{11}{5}A + 28°\right) = \sec\left(28° - \frac{6}{5}A\right)$

a. $A = 34°$

b. $A = 10°$

c. $A = 124°$

d. $A = 0°$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 5:27 AM
DATE MODIFIED: 5/28/2021 6:21 AM

12. Solve the equation. Assume all angles are acute.

$\tan\left(\frac{1}{2}A + 8°\right) = \cot(3A + 47°)$

a. $A = 10°$

b. $A = -15.6°$

c. $A = 35.7°$

d. $A = 36.9°$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True

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Section 1.3 - Trigonometric Functions: Right Triangle Ratios

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13. Use the given function value to find the exact value of each indicated trigonometric function.

$\cot\theta = \sqrt{14}$

(a) $\tan\theta$
(b) $\tan(90^\circ - \theta)$
(c) $\cot(90^\circ - \theta)$

a. (a) $\frac{\sqrt{14}}{14}$; (b) $\sqrt{14}$; (c) $\frac{\sqrt{14}}{14}$

b. (a) $\frac{\sqrt{14}}{14}$; (b) $\frac{\sqrt{14}}{14}$; (c) $\sqrt{14}$

c. (a) $\sqrt{14}$; (b) $\frac{\sqrt{14}}{14}$; (c) $\frac{\sqrt{14}}{14}$

d. (a) $\sqrt{14}$; (b) $\frac{\sqrt{14}}{14}$; (c) $\sqrt{14}$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 6:23 AM
DATE MODIFIED: 5/28/2021 6:32 AM

14. Convert the angle measure to DMS form. Round your result to the nearest second.

0.271°

a. $0^\circ 16' 16''$
b. $16^\circ 16'$
c. $0^\circ 27' 1''$
d. $0^\circ 16'$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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15. Convert the angle measure to DMS form. Round your result to the nearest second.

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$88.577°$

a. $88°34'37''$
b. $88°34'62''$
c. $88°57'7''$
d. $88°34'$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 7:44 AM
DATE MODIFIED: 5/28/2021 7:52 AM

16. Convert the angle measure to decimal degree form. Round your result to three decimal places.

$39°44'$

a. $39.733°$
b. $39.122°$
c. $39.44°$
d. $39.489°$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 7:53 AM
DATE MODIFIED: 5/28/2021 8:03 AM

17. Convert the angle measure to decimal degree form. Round your result to three decimal places.

$58°26'50''$

a. $58.447°$
b. $59.266°$
c. $58.572°$
d. $58.265°$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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Section 1.3 - Trigonometric Functions: Right Triangle Ratios

18. Use a calculator to evaluate the function. Round your result to three decimal places.

$\sec 57°43'66''$

a. 1.873
b. 1.931
c. 1.486
d. 1.054

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 8:11 AM
DATE MODIFIED: 5/28/2021 8:54 AM

19. From the top of a mountain road, a surveyor takes several measurements to determine that the steepness θ of the road is $4.4°$. The maximum recommended slope of the road is $\frac{2}{25}$. Is the road steeper than recommended? Explain.

a. No because $\tan 4.4°$ is less than the maximum recommended slope.
b. Yes because $\tan 4.4°$ is less than the maximum recommended slope.
c. No because $\sin 4.4°$ is greater than the maximum recommended slope.
d. Yes because $\tan 4.4°$ is greater than the maximum recommended slope.

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 8:31 AM
DATE MODIFIED: 5/28/2021 8:43 AM

20. From the top of a mountain road, a surveyor takes several measurements to determine that the steepness θ of the road is $4.2°$. Percent grade is given by $x = 100 \tan \theta$. Find the percent grade of the road to the nearest tenth of a percent.

a. $x = 7.3\%$
b. $x = 72.7\%$
c. $x = 2.3\%$
d. $x = 177.8\%$

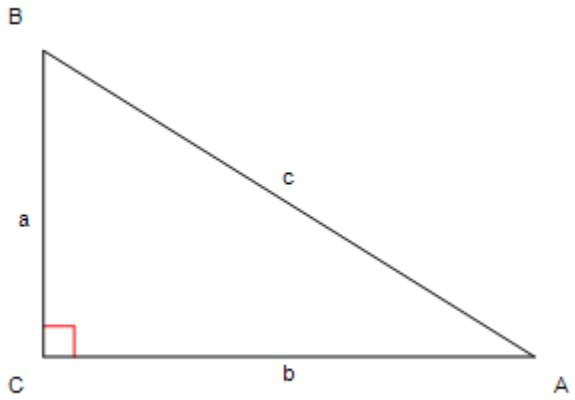
ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 8:43 AM
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Section 1.4 - Solving Right Triangles

1. Solve the right triangle shown in the figure.



$B = 60°; c = 14$

a. $A = 30°; a = 7; b = 7\sqrt{3}$

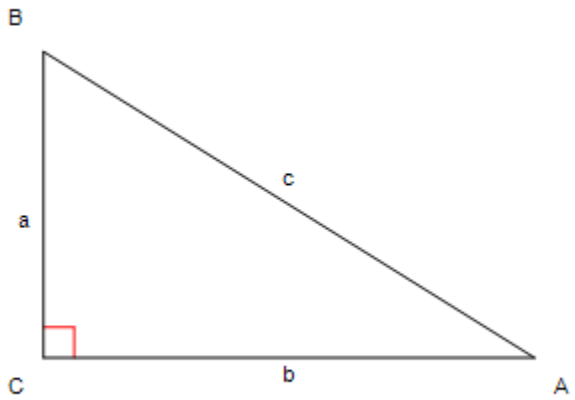
b. $A = 30°; a = 7\sqrt{3}; b = 7$

c. $A = 30°; a = 7; b = 7$

d. $A = 30°; a = 7\sqrt{3}; b = 7\sqrt{3}$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/28/2021 9:33 AM
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2. Solve the right triangle shown in the figure.



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$A = 8.6°; a = 45.9$

a. $B = 81.4°; b = 303.5; c = 306.95$

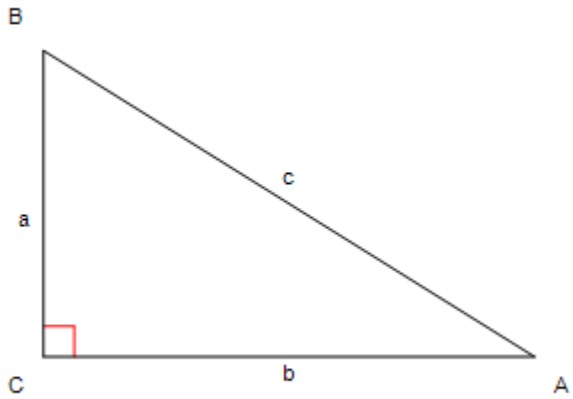
b. $B = 81.4°; b = 306.95; c = 303.5$

c. $B = 81.4°; b = 6.94; c = 46.42$

d. $B = 81.4°; b = 303.5; c = 46.42$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/31/2021 2:17 AM
DATE MODIFIED: 5/31/2021 2:37 AM

3. Solve the right triangle shown in the figure.



$a = 16.10; c = 53.33$

a. $A = 17.57°; B = 72.43°; b = 50.84$

b. $A = 0.31°; B = 1.26°; b = 50.84$

c. $A = 55.2°; B = 34.8°; b = 50.84$

d. $A = 17.57°; B = 72.43°; b = 55.71$

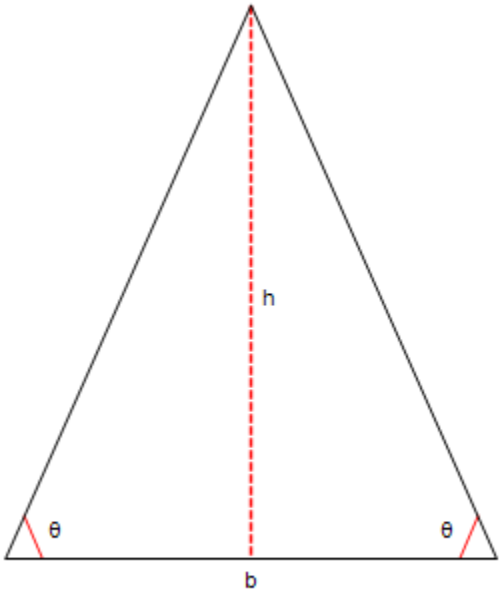
ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/31/2021 3:40 AM
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Section 1.4 - Solving Right Triangles

4. Find the altitude h of the isosceles triangle shown in the figure.



$\theta = 45^\circ; b = 18$

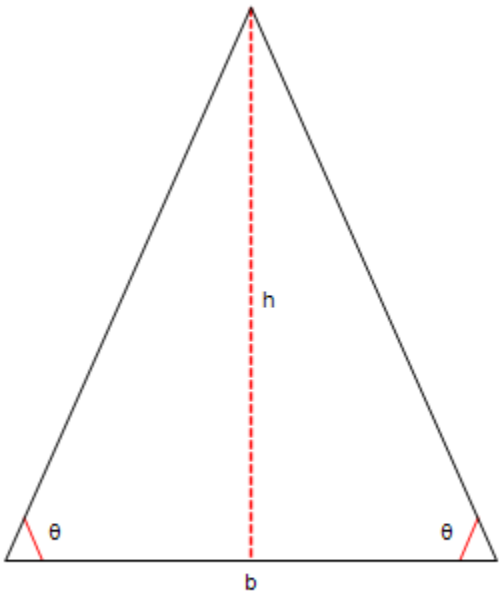
a. $h = 9$
b. $h = 9\sqrt{2}$
c. $h = 9\sqrt{3}$
d. $h = 18$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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5. Find the altitude h of the isosceles triangle shown in the figure.

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$\theta = 29^\circ$; $b = 15$

a. $h = 4.16$
b. $h = 13.53$
c. $h = 8.31$
d. $h = 1.22$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/31/2021 6:02 AM
DATE MODIFIED: 5/31/2021 6:12 AM

6. A ladder that is 25 feet long leans against a house. The angle of elevation of the ladder is 79°. Find the height from the top of the ladder to the ground.

a. 24.5 feet
b. 4.8 feet
c. 10.6 feet
d. 128.6 feet

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True

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Section 1.4 - Solving Right Triangles

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7. You are skiing down a 1250-foot high mountain. The distance from the top of the mountain to the base is 2500 feet. What is the angle of elevation from the base to the top of the mountain?

a. $\theta = 30°$
b. $\theta = 60°$
c. $\theta = 45°$
d. $\theta = 90°$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/31/2021 6:48 AM
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8. You are standing 45 meters from the base of the skyscraper. You estimate that the angle of elevation to your friend on the 83th floor (the observatory) is $76°$. The total height of the building is another 123 meters above the 83th floor. Approximate (a) the height of the building and (b) the distance between you and your friend.

a. (a) 303.5 meters; (b) 186 meters
b. (a) 180.5 meters; (b) 186 meters
c. (a) 134.3 meters; (b) 46.4 meters
d. (a) 303.5 meters; (b) 225.5 meters

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 5/31/2021 6:57 AM
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9. A passenger in an airplane at an altitude of 10 kilometers sees two towns directly to the east of the plane. The angles of depression to the towns are $23°$ and $54°$. How far apart are the towns?

a. 16.3 kilometers
b. 30.8 kilometers
c. 9.5 kilometers
d. 13.2 kilometers

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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Section 1.4 - Solving Right Triangles

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10. In traveling across flat land, you see a mountain directly in front of you. Its angle of elevation (to the peak) is $3.5°$. After you drive 12 miles closer to the mountain, the angle of elevation is $7°$. Approximate the height of the mountain.

a. 1.5 miles
b. 0.7 miles
c. 0.5 miles
d. 7.9 miles

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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