

G.SRT.C.8: Pythagorean Theorem 2a

- 1 If the length of the legs of a right triangle are 5 and 7, what is the length of the hypotenuse?
 - 1) $\sqrt{2}$
 - 2) $2\sqrt{3}$
 - 3) $2\sqrt{6}$
 - 4) $\sqrt{74}$

- 2 The legs of an isosceles right triangle each measure 10 inches. What is the length of the hypotenuse of this triangle, to the *nearest tenth of an inch*?
 - 1) 6.3
 - 2) 7.1
 - 3) 14.1
 - 4) 17.1

- 3 The length of the hypotenuse of a right triangle is 34 inches and the length of one of its legs is 16 inches. What is the length, in inches, of the other leg of this right triangle?
 - 1) 16
 - 2) 18
 - 3) 25
 - 4) 30

- 4 In triangle RST , angle R is a right angle. If $TR = 6$ and $TS = 8$, what is the length of RS ?
 - 1) 10
 - 2) 2
 - 3) $2\sqrt{7}$
 - 4) $7\sqrt{2}$

- 5 In right triangle ABC , $m\angle C = 90$, $AC = 7$, and $AB = 13$. What is the length of BC ?
 - 1) 6
 - 2) 20
 - 3) $\sqrt{120}$
 - 4) $\sqrt{218}$

- 6 The longest side of a right triangle is 25. If one of the other sides is 5, which measure is the length of the missing side?
 - 1) $5\sqrt{26}$
 - 2) $10\sqrt{6}$
 - 3) 30
 - 4) 60

- 7 A woman has a ladder that is 13 feet long. If she sets the base of the ladder on level ground 5 feet from the side of a house, how many feet above the ground will the top of the ladder be when it rests against the house?
 - 1) 8
 - 2) 9
 - 3) 11
 - 4) 12

- 8 A cable 20 feet long connects the top of a flagpole to a point on the ground that is 16 feet from the base of the pole. How tall is the flagpole?
 - 1) 8 ft
 - 2) 10 ft
 - 3) 12 ft
 - 4) 26 ft

- 9 An equilateral triangle has sides of length 20. To the *nearest tenth*, what is the height of the equilateral triangle?
- 1) 10.0
 - 2) 11.5
 - 3) 17.3
 - 4) 23.1
- 10 The length of one side of a square is 13 feet. What is the length, to the *nearest foot*, of a diagonal of the square?
- 1) 13
 - 2) 18
 - 3) 19
 - 4) 26
- 11 The length and width of a rectangle are 48 inches and 40 inches. To the *nearest inch*, what is the length of its diagonal?
- 1) 27
 - 2) 62
 - 3) 88
 - 4) 90
- 12 If the length of a rectangular television screen is 20 inches and its height is 15 inches, what is the length of its diagonal, in inches?
- 1) 15
 - 2) 13.2
 - 3) 25
 - 4) 35
- 13 Linda is designing a circular piece of stained glass with a diameter of 7 inches. She is going to sketch a square inside the circular region. To the *nearest tenth of an inch*, the largest possible length of a side of the square is
- 1) 3.5
 - 2) 4.9
 - 3) 5.0
 - 4) 6.9

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Answer Section

1 ANS: 4

$$5^2 + 7^2 = c^2$$

$$74 = c^2$$

$$\sqrt{74} = c$$

REF: 010202a

2 ANS: 3

$$10^2 + 10^2 = c^2$$

$$c^2 = 200$$

$$c \approx 14.1$$

REF: 061102ia

3 ANS: 4

$$16^2 + b^2 = 34^2$$

$$b^2 = 900$$

$$b = 30$$

REF: 080809ia

4 ANS: 3

$$\sqrt{8^2 - 6^2} = \sqrt{28} = \sqrt{4} \sqrt{7} = 2\sqrt{7}$$

REF: 061329ia

5 ANS: 3

$$\sqrt{13^2 - 7^2} = \sqrt{120}$$

REF: 081323ia

6 ANS: 2

$$\sqrt{25^2 - 5^2} = \sqrt{600} = 10\sqrt{6}$$

REF: 061624ia

7 ANS: 4

$$5^2 + b^2 = 13^2$$

$$b^2 = 144$$

$$b = 12$$

REF: 060115a

8 ANS: 3

$$16^2 + b^2 = 20^2$$

$b^2 = 144$. 12, 16, 20 is a multiple of the 3, 4, 5 triangle.

$$b = 12$$

REF: 080707a

9 ANS: 3

$$\sqrt{20^2 - 10^2} \approx 17.3$$

REF: 081608geo

10 ANS: 2

$$13^2 + 13^2 = x^2$$

$$338 = x^2$$

$$\sqrt{338} = x$$

$$18 \approx x$$

REF: 061223ia

11 ANS: 2

$$\sqrt{48^2 + 40^2} = \sqrt{2304 + 1600} = \sqrt{3904} \approx 62$$

REF: 011417ia

12 ANS: 3

$$15^2 + 20^2 = c^2$$

$625 = c^2$ 15, 20, 25 is a multiple of the 3, 4, 5 triangle.

$$25 = c$$

REF: 060710a

13 ANS: 2

$$s^2 + s^2 = 7^2$$

$$2s^2 = 49$$

$$s^2 = 24.5$$

$$s \approx 4.9$$

REF: 081511geo