G.SRT.C.8: Pythagorean Theorem 2

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 $\overline{RS}$?
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 $\overline{BC}$?
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 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

10 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

11 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

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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: 2

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

$338 = x^2$

$\sqrt{338} = x$

$18 \approx x$

REF: 061223ia

10 ANS: 2

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

REF: 011417ia

11 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