

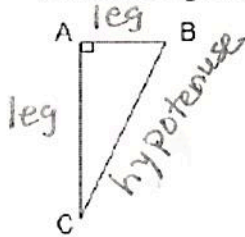
Name: _____

Date: 5/16 Key

Pythagorean Theorem Review Sheet

1.)

Which segment represents the hypotenuse of the triangle below?



A. \overline{AB}

B. \overline{AC}

C. \overline{BC}

2.)

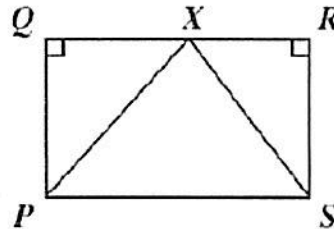
Three triangles are drawn in rectangle $PQRS$. Which of the following segments is a hypotenuse of one of these triangles?

A. \overline{RS}

B. \overline{RQ}

C. \overline{XS}

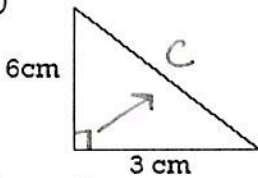
D. \overline{XQ}



3. For each question below, determine the length of the unknown side. Show all of your work. *rounded to tenths*

use $a^2 + b^2 = c^2$

a)

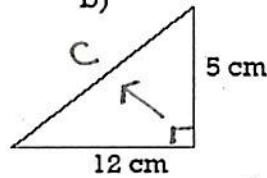


$$3^2 + 6^2 = c^2$$

$$9 + 36 = c^2$$

$$c^2 = 45 \quad c = \sqrt{45} \approx 6.7 \text{ cm}$$

b)

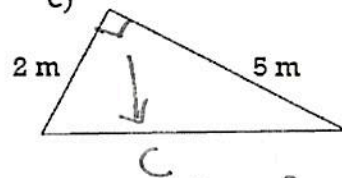


$$5^2 + 12^2 = c^2$$

$$c^2 = 169$$

$$c = \sqrt{169} = 13 \text{ cm}$$

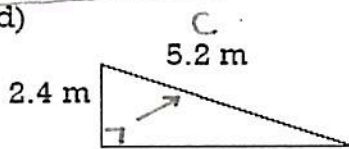
c)



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

$$c^2 = 29 \quad c = \sqrt{29} \approx 5.4 \text{ m}$$

d)



$$2.4^2 + x^2 = 5.2^2$$

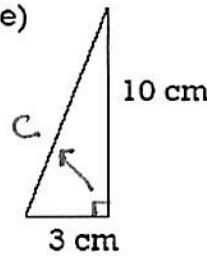
$$5.76 + x^2 = 27.04$$

$$x^2 = 21.28$$

$$x = \sqrt{21.28}$$

$$x \approx 4.6 \text{ m}$$

e)

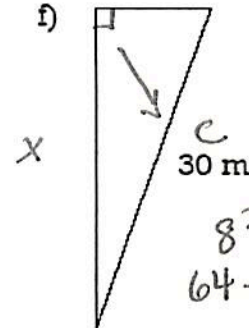


$$3^2 + 10^2 = c^2$$

$$109 = c^2$$

$$c = \sqrt{109} \approx 10.4 \text{ cm}$$

f)



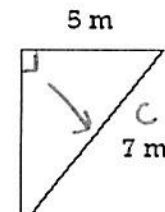
$$8^2 + x^2 = 30^2$$

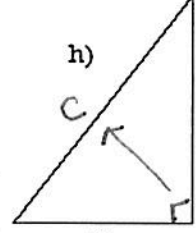
$$64 + x^2 = 900$$

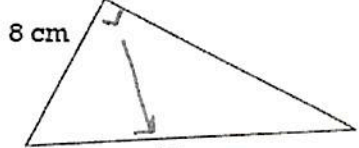
$$x^2 = 836$$

$$x = \sqrt{836}$$

$$x \approx 28.9 \text{ m}$$

g)  $5^2 + x^2 = 7^2$
 $25 + x^2 = 49$
 $x^2 = 24$
 $x = \sqrt{24}$
 $x \approx 4.9\text{m}$

h)  $10^2 + 15^2 = c^2$
 $c^2 = 325$
 $c = \sqrt{325} \approx 18.0\text{cm}$

i)  $8^2 + x^2 = 25^2$
 $64 + x^2 = 625$
 $x^2 = 561$
 $x = \sqrt{561}$
 $x \approx 23.7\text{cm}$

5. Use the Pythagorean Theorem to prove whether the three sides given represent a right triangle.

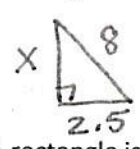
a.) 1, 2, 3
 $1^2 + 2^2 = 3^2$
 $1 + 4 = 9$
 $5 \neq 9$ No.

b.) 15, 36, 39
 $15^2 + 36^2 = 39^2$
 $225 + 1296 = 1521$
 $1521 = 1521$ ✓

Yes

For each word problem below, draw a diagram to help solve. Round your answer to the nearest hundredth where necessary.

6. A ladder is leaning up against a house. The foot of the ladder is 2.5 feet from the house. The ladder is 8 feet long. How far up the side of the house does it reach?



$$2.5^2 + x^2 = 8^2$$

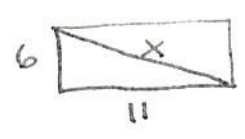
$$6.25 + x^2 = 64$$

$$x^2 = 57.75$$

$$x = \sqrt{57.75}$$

$$x \approx 7.6\text{ft.}$$

7. A rectangle is 6 feet long and 11 feet wide. What is the length of the diagonal of the rectangle?



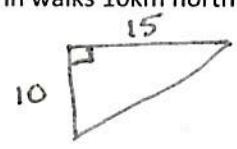
$$6^2 + 11^2 = x^2$$

$$36 + 121 = x^2$$

$$x^2 = 157$$

$$x = \sqrt{157} \approx 12.5\text{ft}$$

8. John walks 10km north and then 15 km east. How far is he from his starting point?



$$10^2 + 15^2 = x^2$$

$$325 = x^2$$

$$x = \sqrt{325} \approx 18.0\text{km}$$