

Pythagorean Theorem Study Guide

1. a) $a^2 + b^2 = c^2$
 b)

a) 3, 4, 5
 a , b , c

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

$$3^2 + 4^2 = 5^2$$

$$9 + 16 = 25$$

$$\sqrt{25} = 25 \checkmark$$

Yes

b) 5, 7, 9
 a , b , c

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

$$5^2 + 7^2 = 9^2$$

$$25 + 49 = 81$$

$$\sqrt{74} \neq 81$$

No

c) 6, 8, 10
 a , b , c

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

$$6^2 + 8^2 = 10^2$$

$$36 + 64 = 100$$

$$\sqrt{100} = 100$$

Yes

d) 2, 15, 17
 a , b , c

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

$$2^2 + 15^2 = 17^2$$

$$4 + 225 = 289$$

$$229 \neq 289$$

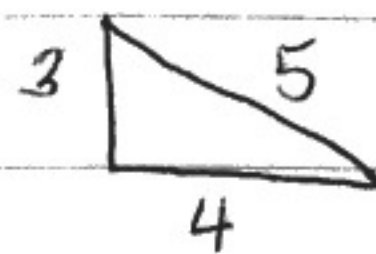
No

2. (D)

$$3^2 + 4^2 = 5^2$$

$$9 + 16 = 25$$

$$25 = 25$$



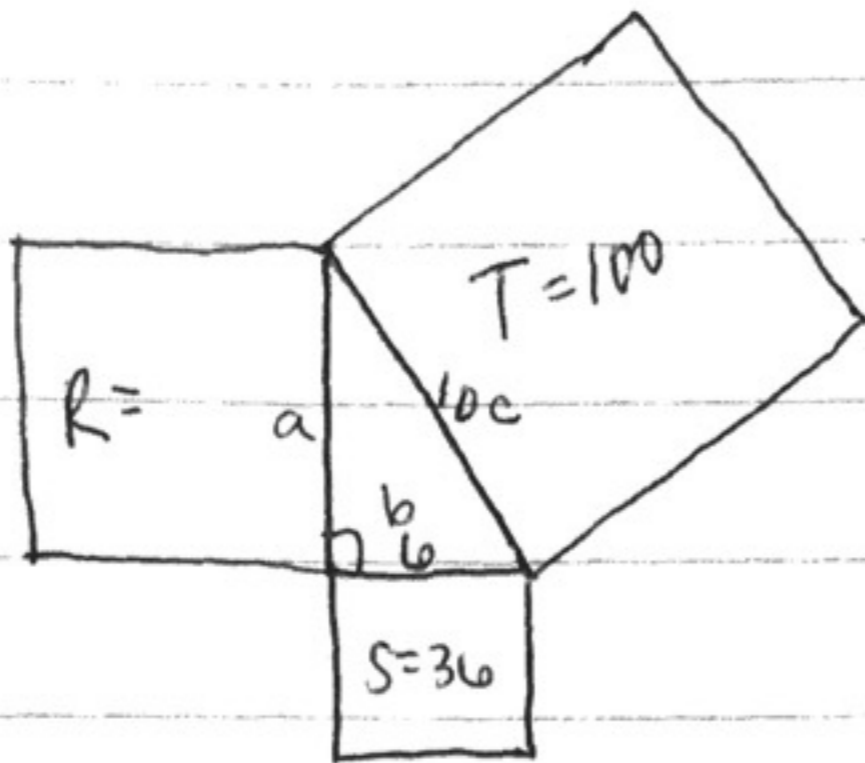
3. (A)

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

area of
 the two smaller
 squares
 combined

area of
 the larger square

4. D.



R S T

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

$$a^2 + b^2 = 10^2$$

$$a^2 + 36 = 100$$

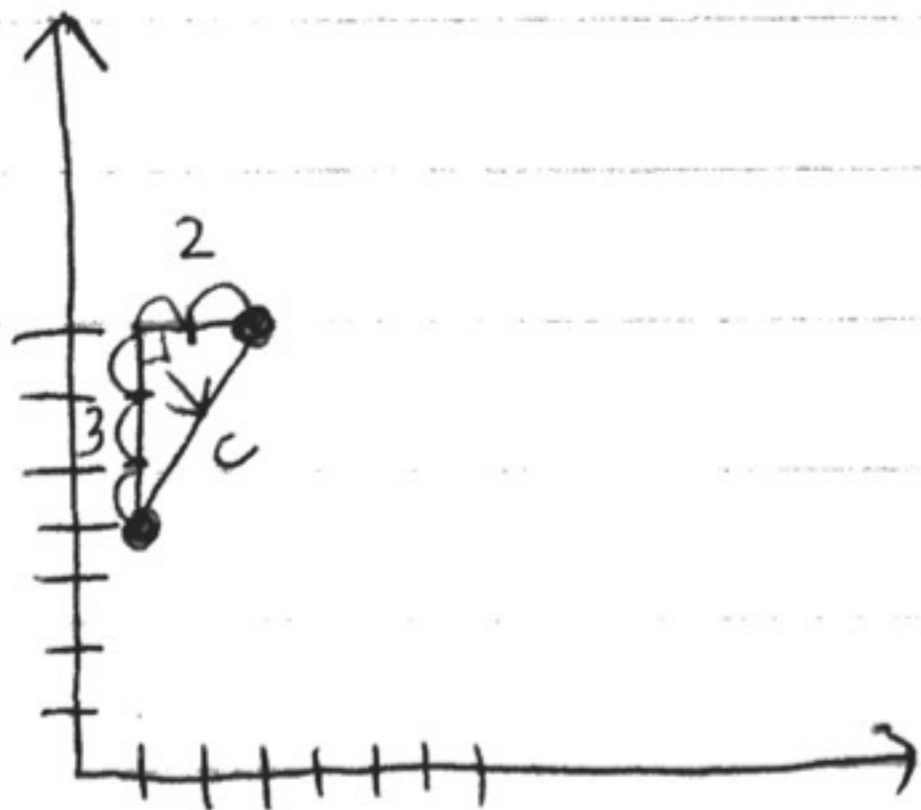
$$\begin{array}{r} -36 \\ \hline \end{array}$$

$$a^2 = 64$$

⇒ X The difference of 10^2 and 36 !

area of square R

5.



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

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

$$4 + 9 = c^2$$

$$13 = c^2$$

$$\sqrt{13} = \sqrt{c^2}$$

$$\boxed{3.6 = c}$$

6.



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

$$3^2 + 7^2 = c^2$$

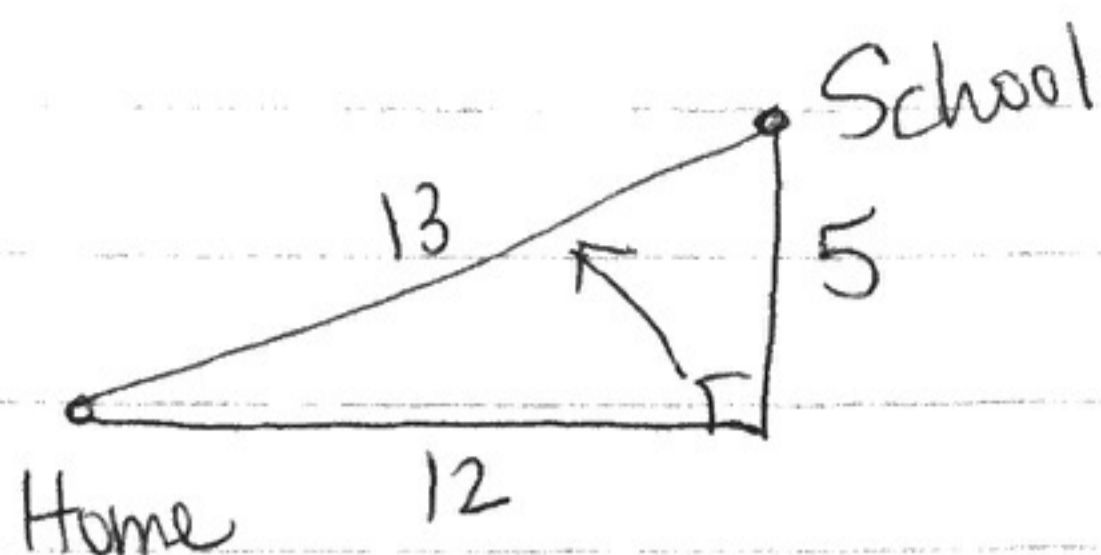
$$9 + 21 = c^2$$

$$30 = c^2$$

$$\sqrt{30} = \sqrt{c^2}$$

$$\boxed{5.5 = c}$$

7.



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

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

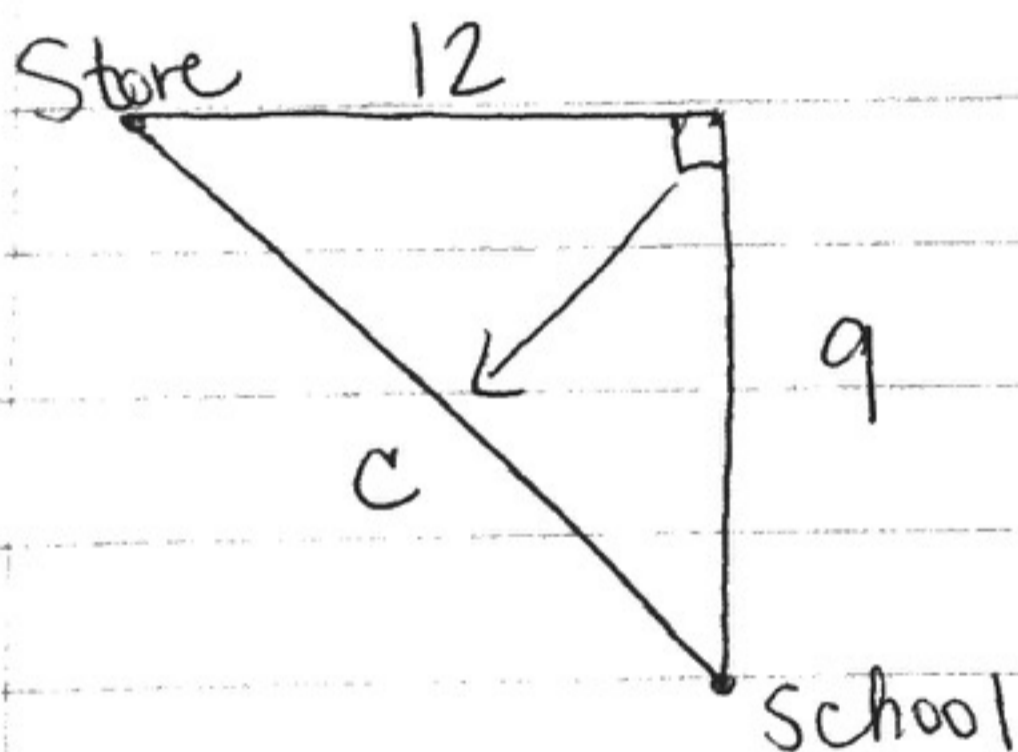
$$25 + 144 = c^2$$

$$169 = c^2$$

$$\sqrt{169} = \sqrt{c^2}$$

$$13 = c$$

* it says distance
from home to school is 1.3
miles. $\frac{13}{10} = 1.3$



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

$$9^2 + 12^2 = c^2$$

$$81 + 144 = c^2$$

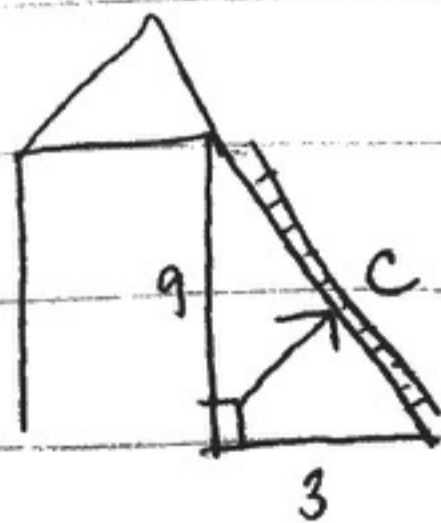
$$225 = c^2$$

$$\sqrt{225} = \sqrt{c^2}$$

$$15 = c$$

* divide answer by 10 to get miles. $\frac{15}{10} = 1.5 \text{ miles}$

8.



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

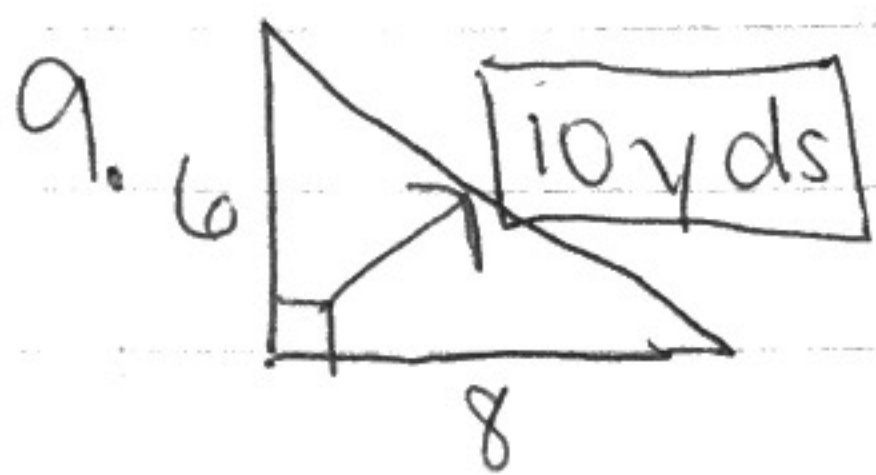
$$3^2 + 9^2 = c^2$$

$$9 + 81 = c^2$$

$$90 = c^2$$

$$\sqrt{90} = \sqrt{c^2}$$

$$9.5 = c$$



6, 8, 10 Pythagorean Triple!

$$6^2 + 8^2 = 10^2$$

$$36 + 64 = 100$$

$$100 = 100 \checkmark$$

10. a) $a^2 + b^2 = c^2$

$$0.9^2 + 0.6^2 = 1.5^2$$

$$.81 + .36 = 2.25 \quad \text{No}$$

$$1.17 \neq 2.25$$

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

b) $0.9^2 + 1.2^2 = 1.5^2$

$$.81 + 1.44 = 2.25 \quad \text{Yes}$$

$$2.25 = 2.25 \checkmark$$

Yes

(B)

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

c) $0.9^2 + 1.2^2 = 1.8^2$

$$.81 + 1.44 = 3.24 \quad \text{No}$$

$$2.25 \neq 3.24$$

No

d) $a^2 + b^2 = c^2$

$$0.9^2 + 1.5^2 = 1.5^2$$

$$.81 + 2.25 = 2.25 \quad \text{No}$$

$$3.06 \neq 2.25$$

No