

WARMUP

Solve for x. Assume x represents a POSITIVE number.

1. $x^2 + 4^2 = 5^2$

2. $5^2 + x^2 = 13^2$

3. $x^2 + 3^2 = 4^2$

4. $4^2 + 7^2 = x^2$

5. $x^2 + 5^2 = 10^2$

6. $1^2 + x^2 = 3^2$

7. $x^2 + 5^2 = (5\sqrt{2})^2$

Answer

SECTION 8.2: THE PYTHAGOREAN THEOREM

Standards:

THE PYTHAGOREAN THEREOM

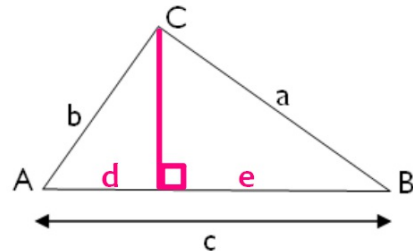
In a right tirangle, the square of the hypotenuse is equal to the sum of the squares of the legs.

THE PROOF

Given: $\triangle ABC$; $\angle ACB$ is a right angle

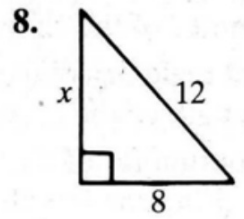
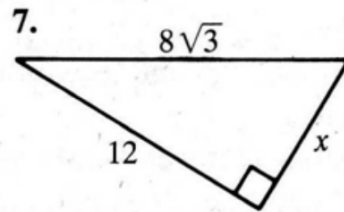
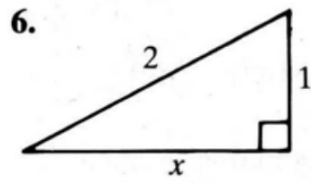
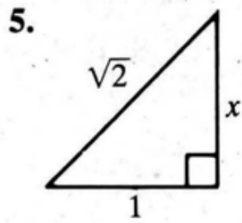
Prove: $c^2 = a^2 + b^2$

Proof:

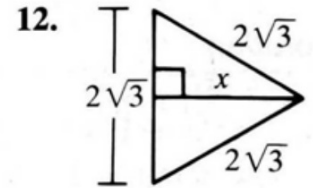
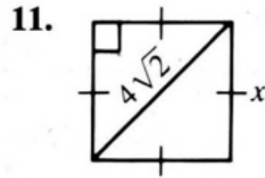
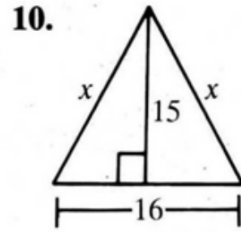
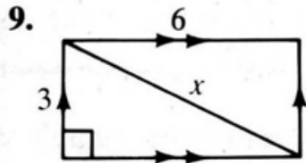


| STATEMENTS | REASONS |
|--|---|
| 1) $\triangle ABC$; $\angle ACB$ is a rt \angle | 1) Given |
| 2) Draw a \perp from C to \overline{AB} | 2) Through a point outside a line, there is exactly 1 line perpendicular to the given line |
| 3) $\frac{c}{a} = \frac{a}{e}$; $\frac{c}{b} = \frac{b}{d}$ | 3) When the alt is drawn to the hyp of a rt \triangle , each leg is the geometric mean between the hyp and the segment of the hyp adj to that leg |
| 4) $ce = a^2$; $cd = b^2$ | 4) means - extremes prop |
| 5) $ce + cd = a^2 + b^2$ | 5) Addition Prop of = |
| 6) $c(e + d) = a^2 + b^2$ | 6) Distributive Prop |
| 7) $c = e + d$ | 7) Segment Addition Postulate |
| 8) $c^2 = a^2 + b^2$ | 8) Substitution Prop |

Find the value of x .



Find the value of x .



HOMework

Assignment #8.2

- Pages 292-293 #1-12, 19-21

****FRIDAY FEB 3rd - PROOF QUIZ****

****TUESDAY FEB 7th - QUIZ 8.1-8.4****

