Unit 12 Study Guide

Square Roots

These questions are about two different squares.

1. A square has a side length of 8 units. What is the area of the square?

$64u^2$

2. A different square has an area of 25 square units. What is the side length of this square?

$5u$

Pythagorean Theorem

3.) Determine whether the following numbers could be the sides of a right triangle. Show your work.

6, 12, 14

$6^2+12^2=14^2$

$180 \neq 196$

NO

4.) Determine whether the following numbers could be the sides of a right triangle. Show your work.

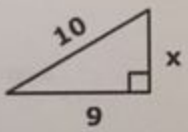
3, 5, 4

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

$9+16=25$

Yes

5.) Solve for x in the triangle.



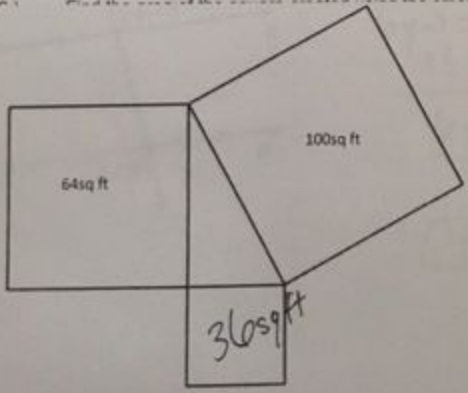
$10^2=x^2+9^2$

$100=x^2+81$

$19=x^2$

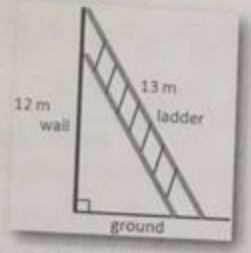
$x=\sqrt{19}$

6.) Find the area of the square created using the longest side of the right triangle below.



$100=64+x$

7.) Find the missing side:



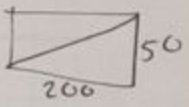
$X^2 + 12^2 = 13^2$

$X^2 + 144 = 169$

$X^2 = 25$

$X = 5$

8. A rectangular park has been constructed downtown. The designer wants to put a gravel walkway that cuts diagonally through the park. If the park is 50 yards wide and 200 yards long, what is the length of his walkway?



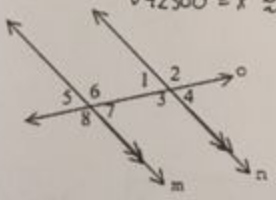
$50^2 + 200^2 = x^2$

$42500 = x^2$

$\sqrt{42500} = x \approx 206$ yrds

Angles

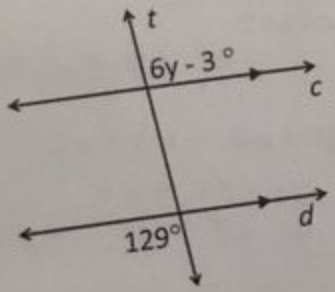
Use the image at right.



9.) $\angle 1$ and $\angle 7$ are _____ angles.

A. Supplementary
B. Parallel
C. Alternate Interior
D. Corresponding
E. None of these

10.) The value of *y* in the diagram at right is



$6y - 3 = 129$

$+3 \quad +3$

$\frac{6y = 132}{6}$

$Y = 22$

Exponent Review

Simply each.

11). $6a^2b^3(8a^5b^{-6})^4$

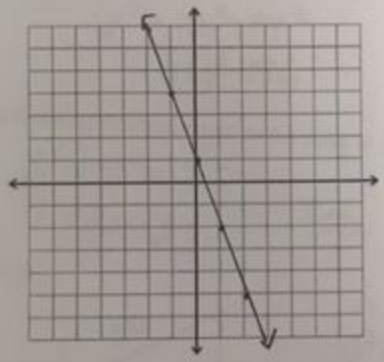
$6a^2b^3 \cdot 8^4a^{20}b^{-24}$

$6 \cdot 8^4 \cdot a^{22}b^{-21}$ = $\frac{24576a^{22}}{b^{21}}$ or

12). $\frac{14w^6}{7w^2}$ $2w^4$

Graphing Review

13.) Graph $y = -3x + 1$



Equation Review

14.) solve for b: $3b - 1 + 4a - 3(4b - a) = -(3a - 2b)$

$3b - 1 + 4a - 12b + 3a = -3a + 2b$

$-9b - 1 + 7a = -3a + 2b$

$+9b \quad +3a \quad +3a \quad +9b$

$-1 + 10a = 11b$

$b = \frac{-1 + 10a}{11}$

15. $\left(\frac{x}{3} + \frac{2x}{2} = \frac{2x+3}{2} + 1\right)6$

$2x + 6x = 6x + 9 \quad +6$

$8x = 6x + 15$

$-8x \quad -8x$

$0 = -2x + 15$

$2x = 15$

$x = 7.5$