

DO NOW:

1APR

1.) COPY THE TABLE BELOW AND FIND THE EQUATION

2.) DON'T JUDGE PEOPLE TOO QUICKLY, YOU NEVER KNOW WHAT BATTLES THEY ARE FIGHTING

X	Y
1	40
2	104
3	198
4	322
5	476



1APR HW ACE 4# 11-18, 36 and 37

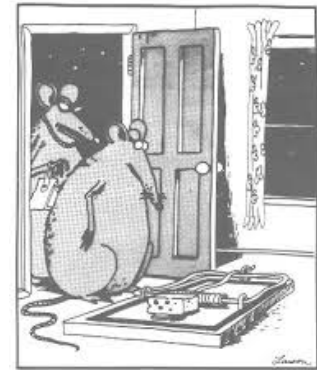
"Well, heaven knows what it is or where it came from — just get rid of it. But save that cheese first."

1ST STEP IS TO FIND 'a'
 2ND STEP IS TO FIND 'c'
 3RD STEP IS TO FIND 'b'
 4TH STEP IS TO WRITE THE EQUATION

$$y = 15x^2 + 19x + 6$$

X	Y
0	6
1	40
2	104
3	198
4	322
5	476

so 'c' = 6
 34
 64
 94
 124
 154
 30
 30
 30
 30
 30
 So 'a' = 15



$$y = ax^2 + bx + c$$

$$(40) = (15)(1)^2 + b(1) + (6)$$

$$40 = 15 + b + 6$$

$$40 = 21 + b$$

$$\begin{array}{r} -21 \quad -21 \\ \hline 19 = b \end{array}$$

Problem 4.3 Sorting Functions

Use the following equations for Questions A–C.

★(1) $y = x^2 + 8x + 16$

(10) $y = (4x - 3)(x + 1)$

★(2) $y = \frac{1}{3}(3^x)$

★(11) $y = 20x - 4x^2$

★(3) $y = 10 - 2x$

(12) $y = x^2$

(4) $y = 2x^3 + 5$

(13) $y = 3^x - 1$

(5) $y = (x^2 + 1)(x^2 + 3)$

(14) $y = 16 - 2(x + 3)$

(6) $y = 0.5^x$

(15) $y = 4x^2 - x - 3$

(7) $y = 22 - 2x$

(16) $y = x + \frac{1}{x}$

(8) $y = \frac{3}{x}$

(17) $y = 4x(5 - x)$

(9) $y = (x + 4)(x + 4)$

(18) $y = 2(x - 3) + 6(1 - x)$



A. Which equations represent functions that are

1. linear? **4**

2. exponential? **3**

3. quadratic? **7**

B. 1. For each function in Question A, find those equations that represent the same function. **4 pairs**★

2. Without graphing the equation, describe the shape of the graph of those equations in part (1). Give as much detail as possible, including patterns of change, intercepts, and maximum and minimum points. *Only for equations found in B1*

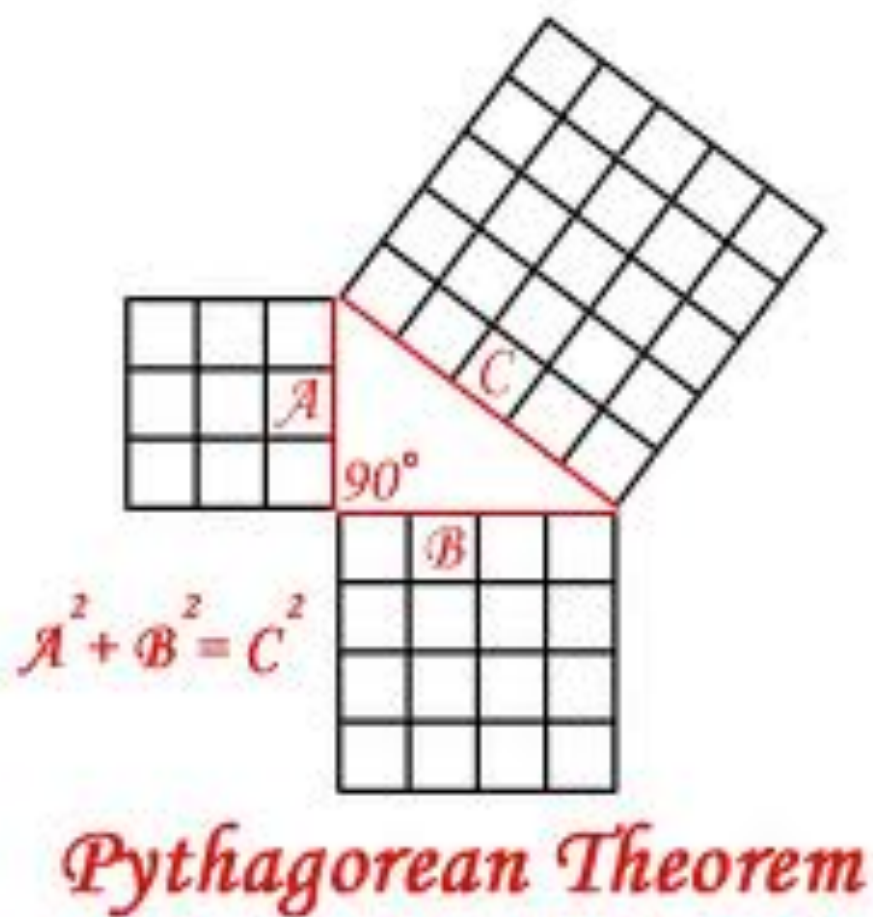
C. Pick one linear, 😊😊😊😊😊😊 and one exponential equation.

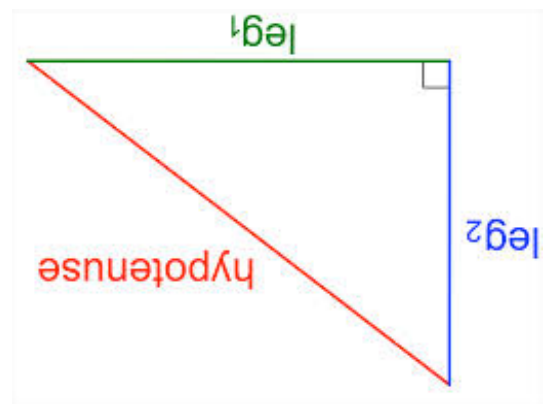
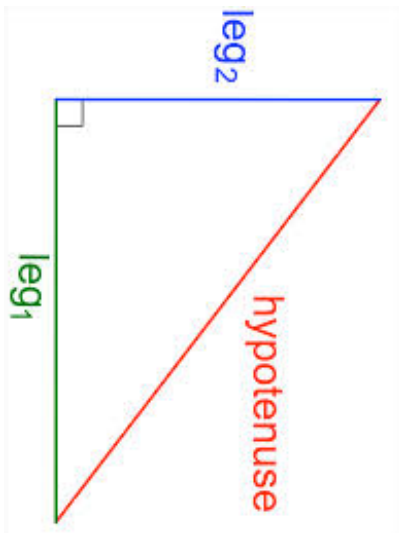
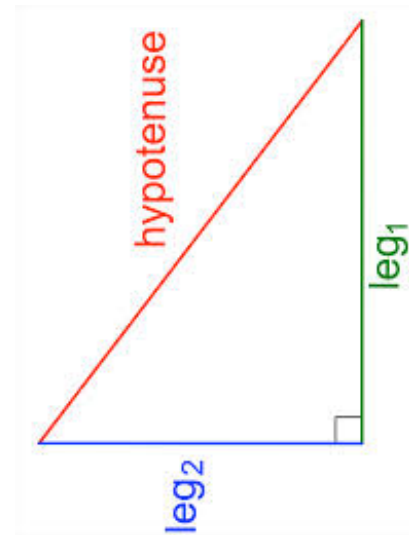
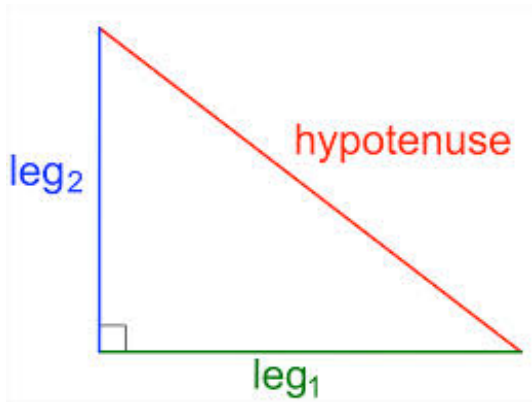
Describe a problem that could be represented by each equation.

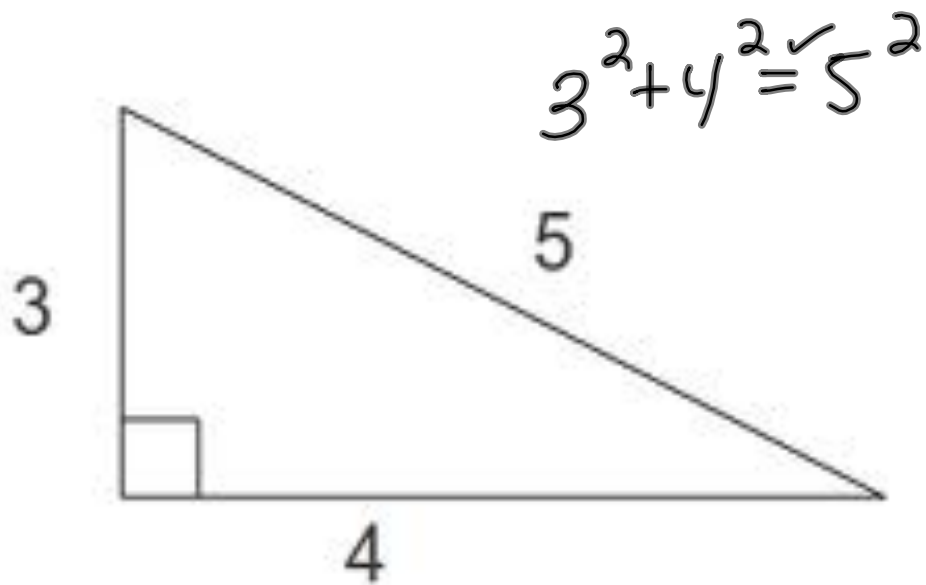
ACE 31MAR HW ACE 4 #3,4,6,11-17 and 32

Answers to Problem 4.3

- A. 1. Equations 3, 7, 14, 18
 2. Equations 2, 6, 13
 3. Equations 1, 9, 10, 11, 12, 15, 17
- B. 1. Equations 1 and 9; Equations 2 and 13;
 Equations 3 and 14; Equations 11 and 17
2. Equations 1 and 9: Quadratics pattern with y -intercept of 16 and x -intercept of -4 . The minimum is $(-4, 0)$.
- Equations 2 and 13: Exponential patterns with starting point $(0, \frac{1}{3})$ and a growth factor of 3.
- Equations 3 and 14: Linear pattern, x -intercept is $(5, 0)$ and y -intercept is 10. The rate of change is -2 . The line has a negative slope, so it falls left to right.
- Equations 11 and 17: Quadratics pattern with y -intercept of $(0, 0)$ and x -intercepts of $(0, 0)$ and $(5, 0)$. The minimum is $(2.5, 25)$.
- C. Answers will vary. An example for Equation 2 is that the King of Montarek will put one ruba on the first square on a chessboard, 3 on the next square, 9 on the next square, and so on, multiplying by 3 for each successive square. Equation 2 represents the number of rubas on square x of the chessboard.



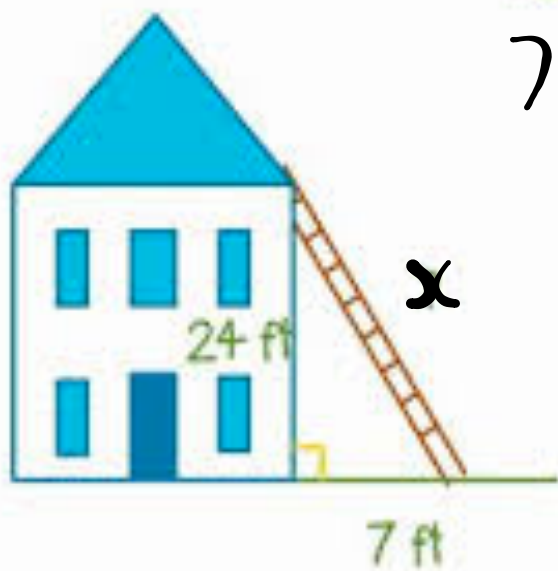




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Core Lesson



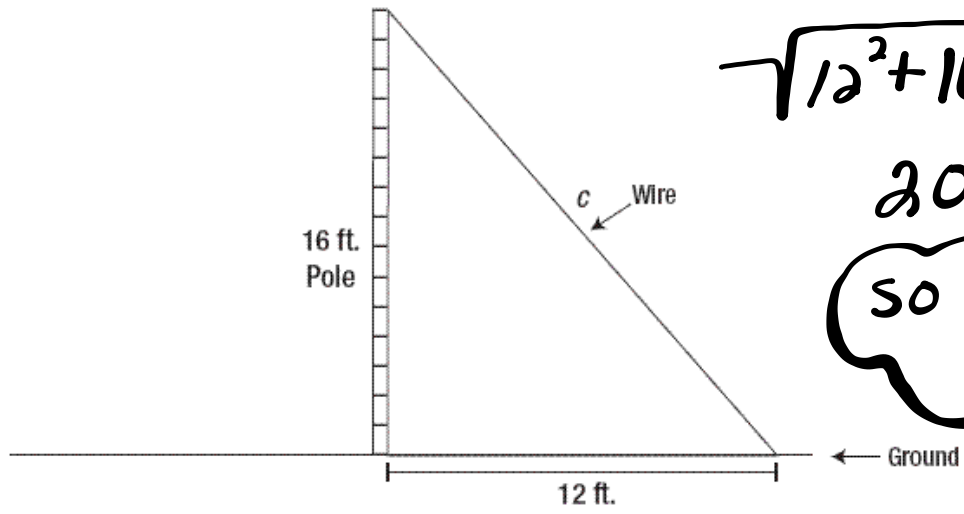
$$\text{leg}^2 + \text{leg}^2 = \text{hypotenuse}^2$$

$$7^2 + 24^2 = x^2$$

$$625 = x^2$$

$$\sqrt{625} = x$$

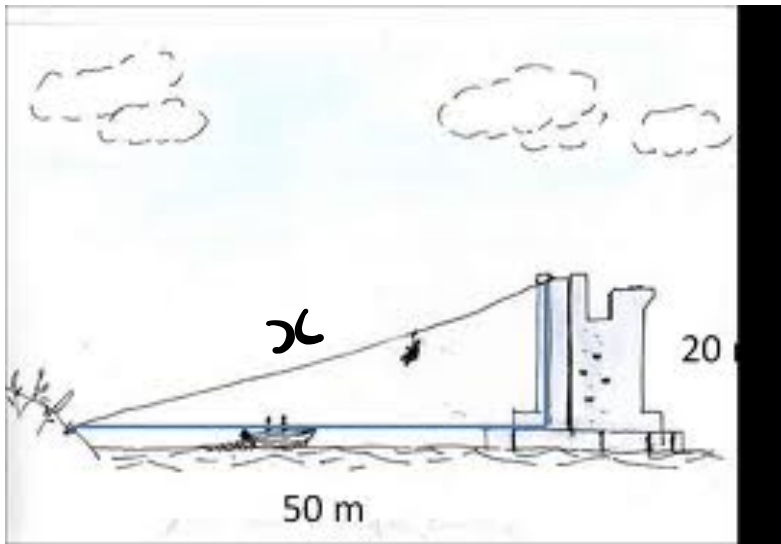
$$25 \text{ feet} = x$$



$$\sqrt{12^2 + 16^2} = \sqrt{c^2}$$

$$20 = c$$

so 20 feet of
wire

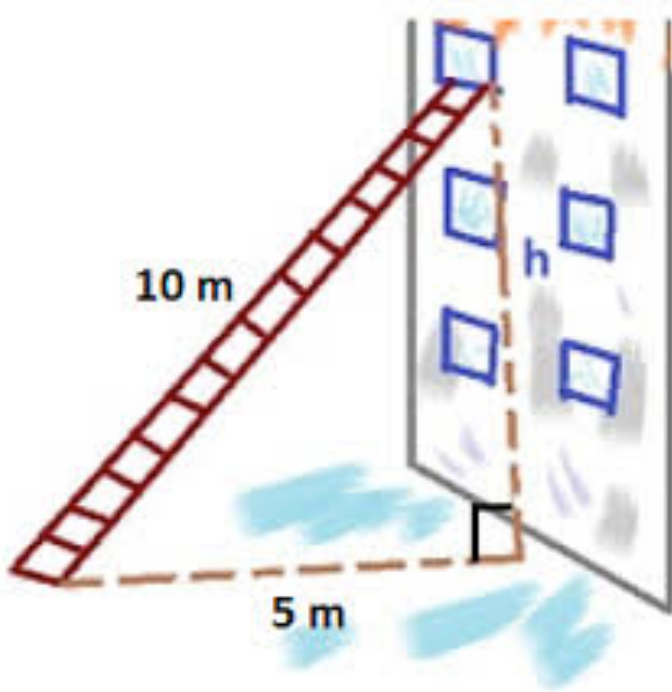


$$20^2 + 50^2 = x^2$$

$$2900 = x^2$$

$$\sqrt{2900} \approx 53.85$$

$$x \approx 54 \text{ m}$$



$$h^2 + 5^2 = 10^2$$

$$h^2 + 25 = 100$$

$$\begin{array}{r} -25 \quad -25 \\ \hline \end{array}$$

$$h^2 = 75$$

$$h = \sqrt{75} \approx 8.66 \text{ m}$$