Name: _____ Class:___ Date: _____

1 Solve the equation for the indicated variable.

$$A = \frac{\pi d^2}{2} + \pi dh \text{; for } d$$

2 Solve the equation for the indicated variable.

$$\frac{1}{r} + \frac{3}{1 - r} = \frac{6}{r^2} \text{; for } r$$

3 Solve the equation for x.

$$b^2x^2 - 3bx + 2 = 0 \quad (b \neq 0)$$

4 Solve the equation for x.

$$bx^2 + 14x + \frac{49}{b} = 0 \quad (b \neq 0)$$

5 Find all values of k that ensure that the given equation has exactly one solution.

$$kx^2 + 32x + k = 0 \qquad (k \neq 0)$$

$k =$ _____

6 The sum of the squares of two consecutive even integers is 1060. Find the integers.

_____

7 A small-appliance manufacturer finds that the profit P (in dollars) generated by producing x microwave ovens per week is given by the formula $P = \frac{1}{10}x(200 - x)$ provided that $0 \leq x \leq 60$. How many ovens must be manufactured in a given week to generate a profit of $\$750$?

$P =$ _____ ovens per week

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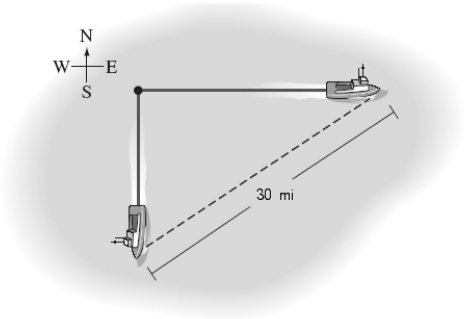
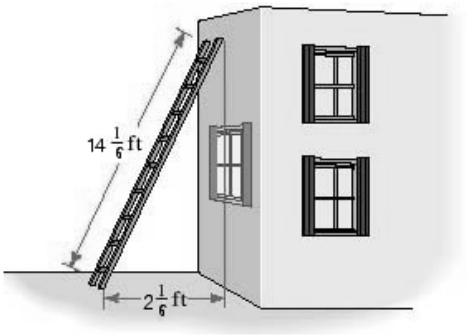
8 Two fishing boats depart a harbor at the same time, one traveling east, the other south. The eastbound boat travels at a speed 3 mi/h faster than the southbound boat. After two hours the boats are 30 mi apart. Find the speed of the southbound boat.



_____ mi/h

9 A $14\frac{1}{6}$ – foot ladder leans against a building. The base of the ladder is $2\frac{1}{6}$ ft from the building. How high up the building does the ladder reach?



_____ ft