

1. Simplify:

a. $\sqrt{12}$

$$= 2\sqrt{3}$$

b. $3\sqrt{8} + 3\sqrt{50}$

$$= 3(2\sqrt{2}) + 3(5\sqrt{2})$$

$$= 21\sqrt{2}$$

2. Calculate the slope of the line containing the points:

A(4, 6) and B(2, 7)

$$m = \frac{7-6}{2-4} = -\frac{1}{2}$$

and

C(-3, 7) and D(4, 2)

$$m = \frac{2-7}{4-(-3)} = -\frac{5}{7}$$

3. If $f(x) = 5x - 6$, evaluate

a. $f(2)$

$$f(2) = 5(2) - 6 \\ = 4$$

b. $f(-3)$

$$f(-3) = 5(-3) - 6 \\ = -21$$

4. State slope and y-intercept of:

$$y = \frac{1}{2}x - 1$$

$$m = \frac{1}{2}$$

$$y\text{-int } (0, -1)$$

5. Factor completely:

a. $x^2 - 2x - 15$

$$= (x-5)(x+3)$$

b. $8a^3 - 12a$

$$= 4a(2a^2 - 3)$$

c. $3x^2 + 13x + 10$

$$= (3x+10)(x+1)$$

6. Multiply the following

a. $4y(y+3)$

$$= 4y^2 + 12y$$

b. $(2x+1)(3x-4)$

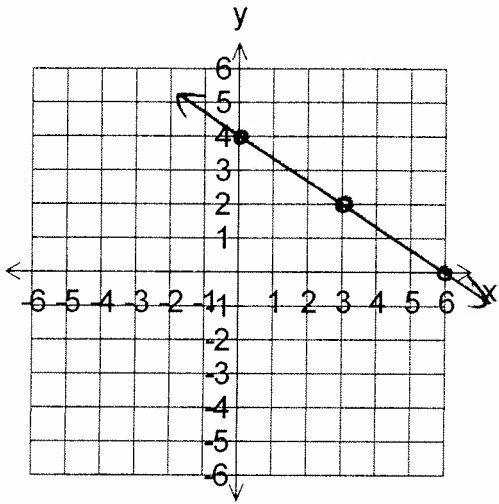
$$= 6x^2 - 8x + 3x - 4 \\ = 6x^2 - 5x - 4$$

c. $(2x-4)^2$

$$(2x-4)(2x-4) \\ = 4x^2 - 16x + 16$$

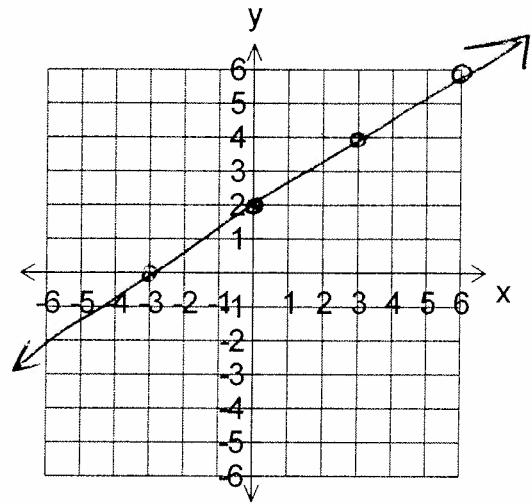
7. Sketch each of the following.

a. $y = -\frac{2}{3}x + 4$ $m = -\frac{2}{3}$ + (0,4)



$$-3y = -2x - 6$$

b. $2x - 3y + 6 = 0$ $y = \frac{2}{3}x + 2$



9. Solve each equation:

a. $6x - 1 = 0$
 $6x = 1$
 $x = \frac{1}{6}$

b. $3x - 7 = x - 1$
 $3x - x = -1 + 7$
 $2x = 6$
 $x = 3$

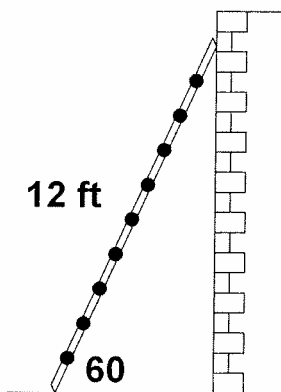
c. $\frac{0.5463}{3} = \frac{x}{5}$
 $x = .91$

d. $4(x - 2) = 7(2x + 1) + 4x$
 $4x - 8 = 14x + 7 + 4x$
 $4x - 18x = 7 + 8$
 $x = -\frac{15}{14}$

e. $\left[\frac{2}{3}x - 2 = 5\right] \times 3$
 $2x - 6 = 15$
 $2x = 21$
 $x = 21/2$

f. $\cos 35 = \frac{x}{15}$
 $.819 = \frac{x}{15}$

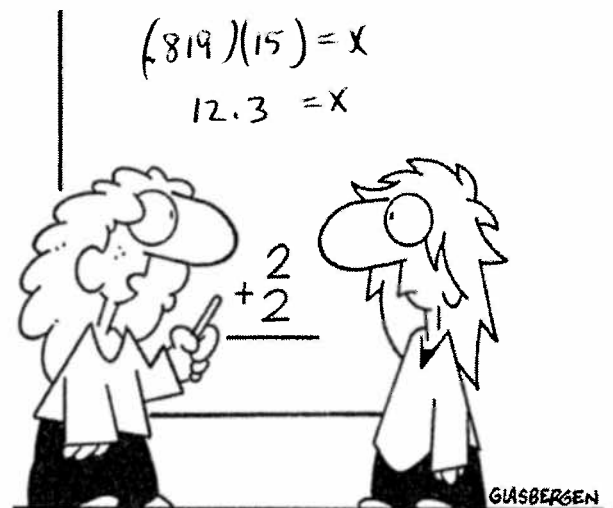
10. Determine the measure of the indicated side.



$$\sin 60 = \frac{x}{12}$$

$$.866 = \frac{x}{12}$$

$$12(.866) = x$$



"First they build up your confidence with simple addition and subtraction, then they slam you with algebra and calculus. It's quite a clever scheme."