

① Convert 6 liters to quarts.

$$\frac{6L}{1} \cdot \frac{1.05 \text{ qt}}{1L} = \boxed{6.3 \text{ qt}}$$

② A bowl of cereal weighs 60 grams. How heavy is it in kg?

$$\frac{60g}{1} \cdot \frac{1 \text{ kg}}{1000g} = \boxed{0.06 \text{ kg}}$$

③ Convert 12 kilometers to feet.

$$\frac{12 \text{ km}}{1} \cdot \frac{1 \text{ mi}}{1.6 \text{ km}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} = \boxed{39,600 \text{ ft}}$$

④ You are in a car traveling that is traveling at 65 mph. How fast is that in ft/min?

$$\frac{65 \text{ mi}}{1 \text{ hr}} \cdot \frac{5280 \text{ ft}}{1 \text{ mi}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} = \boxed{5,720 \frac{\text{ft}}{\text{min}}}$$

⑤ How many terms are in the expression $-12x^3 + 7x^2 - 4x - 19$?

Four

⑥ What are the variables, coefficients, and constants in the expression $20x^4 - 11x + 3$?

Variables: x^4, x

Constants: 3

Coefficients: 20, -11

⑦ Lucy gets paid \$150 a week and \$10 for every computer she sells. Write an equation that represents her weekly income.

$$\boxed{y = 10x + 150}$$

- 8) Andy wants to mail a package. It costs \$4.99 plus \$0.30 for every ounce the package weighs. Write an equation and find how much it will cost for a 12 oz. package.

$$y = 0.30x + 4.99$$

$$y = 0.30(12) + 4.99$$

$$y = \$8.59$$

- 9) Your bank account starts out at \$1 and it quadruples every day. How much money will you have in 2 weeks?

$$y = a \cdot b^x$$

$$y = 1(4)^x$$

$$y = 1(4)^{14}$$

$$2 \text{ wks} = 14 \text{ days}$$

$$\$268,435,456$$

- 10) The number of squirrels in a forest doubles every 3 week. Currently there are 2,000 squirrels around Kennesaw Mountain. How many squirrels will there be in 18 weeks?

$$y = 2,000(2)^x$$

6 three week periods in 18 wks

$$y = 2,000(2)^6$$

$$128,000 \text{ squirrels}$$

- 11) 3 consecutive integers add up to 153. Find the three integers.

$$x + x+1 + x+2 = 153$$

$$3x + 3 = 153$$

$$3x = 150$$

$$x = 50$$

$$50, 51, 52$$

- 12) Three EVEN integers add up to 270. Find the integers.

$$x + x+2 + x+4 = 270$$

$$3x + 6 = 270$$

$$3x = 264$$

$$x = 88$$

$$88, 90, 92$$

- 13) You are trying to save \$20 a week to buy a new CD player. During the last 4 weeks you have saved \$35, \$15, \$10, and \$12. How much do you need to save this week to average \$20 for the 5 weeks?

$$\frac{35 + 15 + 10 + 12 + x}{5} = 20$$

$$\$28$$

$$5 \cdot \frac{72+x}{5} = 20 \cdot 5 \rightarrow \frac{72+x}{-72} = \frac{100}{-72} \quad x = 28$$

- 14) Currently, you have made a 78, 83, and an 80 on your tests in math. What do you need to make on the next test in order to get an average of an 82?

$$\frac{78 + 83 + 80 + x}{4} = 82$$

$$4 \cdot \frac{241 + x}{4} = 82 \cdot 4$$

$$\begin{array}{r} 241 + x = 328 \\ -241 \quad -241 \end{array}$$

$$x = 87$$

15) The length of a rectangle is 11 feet longer than the width. The perimeter of the rectangle is 70 feet. Find the length and the width.

$$x + x + x + 11 + x + 11 = 70$$

$$4x + 22 = 70$$

$$4x = 48$$

$$x = 12$$

Width: 12 ft
Length: 23 ft

16) The length of a rectangle is nine inches more than the width. The perimeter is 34 inches. Find the length.

$$x + x + x + 9 + x + 9 = 34$$

$$4x + 18 = 34$$

$$4x = 16$$

$$x = 4$$

Width: 4 in
Length: 13 in

17) Tony is going to buy fruit for a smoothie. He wants raspberries, r , that are \$4 a carton and strawberries, s , that are \$2 a carton. Write an equation to represent all the combinations of fruit if Tony has \$18 to spend.

$$r = \$4$$

$$s = \$2$$

$$T = \$18$$

$$18 = 4r + 2s$$

18) Using your equation from #17, solve for r , the number of raspberries.

$$\begin{array}{r} 18 = 4r + 2s \\ -2s \quad -2s \\ \hline 18 - 2s = 4r \end{array}$$

$$\frac{18 - 2s}{4} = \frac{4r}{4}$$

$$r = -\frac{1}{2}s + 4.5$$

19) If he buys 2 cartons of raspberries, how many strawberries can he buy?

$$18 = 4(2) + 2s$$

$$18 = 8 + 2s$$

$$10 = 2s$$

$$s = 5$$

5 strawberries

20) Solve for x : $y = -4x + 16$

$$\begin{array}{r} y - 16 = -4x \\ -4 \quad -4 \\ \hline \frac{y - 16}{-4} = \frac{-4x}{-4} \end{array}$$

$$x = -\frac{1}{4}y + 4$$

21) Solve for h : $A = \frac{1}{2}bh \cdot 2$

$$\frac{2A}{b} = \frac{bh}{b}$$

$$h = \frac{2A}{b}$$

$$\textcircled{22} \text{ Solve for } L: P = 2L + 2W$$

$$\frac{P - 2W}{2} = \frac{2L}{2}$$

$$L = \frac{P}{2} - W$$

$$\textcircled{23} \text{ Solve for } r: L = \frac{2\pi r h}{2\pi h}$$

$$r = \frac{L}{2\pi h}$$

$$\textcircled{24} 4x - 13 = 22 - 3x$$

$$\frac{+3x}{+3x}$$

$$X = 5$$

$$7x - 13 = 22 \rightarrow \frac{7x}{7} = \frac{35}{7}$$

$$\textcircled{25} \frac{8x - 2}{6} = 9$$

$$\cdot 6 \cdot \frac{8x - 2}{6} = 9 \cdot 6 \rightarrow \frac{8x - 2}{+2} = \frac{54}{+2}$$

$$\frac{8x}{8} = \frac{56}{8}$$

$$X = 7$$

$$\textcircled{26} \frac{x}{4} - 2 = -10$$

$$\frac{\frac{x}{4} - 2}{+2} = \frac{-10}{+2}$$

$$(4) \cdot \frac{x}{4} = -8 \cdot (4)$$

$$X = -32$$

$$\textcircled{27} 9(11 - k) = 3(3k - 9)$$

$$99 - 9k = 9k - 27$$

$$\frac{+9k}{+9k} \frac{+9k}{+9k}$$

$$99 = 18k - 27$$

$$\rightarrow \frac{126}{18} = \frac{18k}{18}$$

$$k = 7$$

$$\textcircled{28} -2x + 7 \leq 37$$

$$\frac{-7}{-7} \frac{-7}{-7}$$

$$\frac{-2x}{-2} \leq \frac{30}{-2}$$

$$X \geq -15$$

(divide by neg., flip sign)

$$\textcircled{29} -28 \geq 12x - 4$$

$$\frac{+4}{+4} \frac{+4}{+4}$$

$$\frac{-24}{12} \geq \frac{12x}{12}$$

$$-2 \geq x$$

$$X \leq -2$$

$$\textcircled{30} \quad \frac{2}{3}x < 14 \quad \left(\frac{3}{2}\right) \cdot \frac{2}{3}x < 14 \cdot \left(\frac{3}{2}\right)$$
$$\boxed{x < 21}$$

$$\textcircled{31} \quad \frac{3}{10}x + 21 < 0$$

$$\frac{3}{10}x + 21 < 0$$

$$\quad \quad -21 \quad -21$$

$$\left(\frac{10}{3}\right) \cdot \frac{3}{10}x < -21 \quad \left(\frac{10}{3}\right)$$

$$\boxed{x < -70}$$