



ORDER OF OPERATIONS

Directions: Simplify each expression. Round to the nearest hundredth if needed.

1) $4^2 + 2(6) - 8$ $16 + 12 - 8$ $28 - 8$ 20	2) $9 \div 3 + 6 \cdot 2 \div 2^2$ $3 + 6 \cdot 2 \div 4$ $3 + 12 \div 4$ $3 + 3$ 6	3) $20 - 4(4) - 2 + 6$ $20 - 16 - 2 + 6$ $4 - 2 + 6$ $2 + 6$ 8
4) $9 - 6 + 2(3^2 + 4)$ $9 - 6 + 2(9 + 4)$ $9 - 6 + 2(13)$ $9 - 6 + 26$ $3 + 26 = 29$	5) $-10 + 4(3 - 8) + 2^2$ $-10 + 4(-5) + 4$ $-10 - 20 + 4$ $-30 + 4$ -26	6) $5^2 + 6(2 \cdot 6 \div 3) - 4^2$ $25 + 6(12 \div 3) - 16$ $25 + 6(4) - 16$ $25 + 24 - 16$ 33
7) $12 - 3^2(8 - 4 \cdot 5)$ $12 - 9(8 - 20)$ $12 - 9(-12)$ $12 + 108$ 120	8) $-10 + 3(12 \div 6 \cdot -2)^2$ $-10 + 3(2 \cdot -2)^2$ $-10 + 3(-4)^2$ $-10 + 3(16)$ $-10 + 48 = 38$	9) $2.2 \cdot 9 + 8 \div 0.4 - 6$ $19.8 + 8 \div 0.4 - 6$ $19.8 + 20 - 6$ 33.8
10) $1.5 + 2.3 - 0.75(4 \cdot 2.6)$ $1.5 + 2.3 - 0.75(10.4)$ $1.5 + 2.3 - 7.8$ -4	11) $5 - \frac{1}{2} \left(6\frac{1}{2} + 14 - 12\frac{2}{3} \right)$ $5 - \frac{1}{2} \left(20\frac{1}{2} - 12\frac{2}{3} \right)$ $5 - \frac{1}{2} \left(7\frac{5}{6} \right)$ $5 - 3\frac{11}{12} = 1\frac{1}{12}$	12) $10\frac{3}{4} + 2\frac{1}{5} \cdot 6\frac{1}{8} - 3\frac{4}{5}$ $10\frac{3}{4} + 13\frac{19}{40} - 3\frac{4}{5}$ $24\frac{9}{40} - 3\frac{4}{5}$ $20\frac{17}{40}$
13) $5^2 - 12 \left(3\frac{1}{2} \cdot 3.4 - 8 \right)$ $25 - 12(11.9 - 8)$ $25 - 12(3.9)$ $25 - 46.8 = -21.8$	14) $-5\frac{1}{2} + \frac{1}{4}((-4)^2 + 8)$ $-5\frac{1}{2} + \frac{1}{4}(16 + 8)$ $-5\frac{1}{2} + \frac{1}{4}(24)$ $-5\frac{1}{2} + 6 = \frac{1}{2}$	15) $6(3.5 \cdot 2)^2 - 18 \div 2\frac{1}{2}$ $6(7^2) - 18 \div 2\frac{1}{2}$ $6(49) - 7.2$ $294 - 7.2 = 286\frac{4}{5}$

SIMPLIFYING EXPRESSIONS

Directions: Simplify each expression.

1) $ -15-4 \cdot 2$ $ -19 \times 2$ 19×2 38	2) $ -5+2 -3$ $ -3 - 3$ $3 - 3$ 0	3) $ -42-8 $ $ -50 $ 50	4) $ 3 \cdot -2 + 6 - 9$ $ -6 + 6 - 9$ $6 + 6 - 9$ 3
5) $\frac{1}{5} - \frac{2}{3} + \frac{4}{5}$ $\frac{3}{15} - \frac{10}{15} + \frac{12}{15}$ $= \frac{5}{15} = \frac{1}{3}$ $\frac{1}{3}$	6) $\frac{2}{5} \cdot \frac{1}{4} + \frac{1}{2}$ $\frac{2}{20} + \frac{1}{2}$ $\frac{2}{20} + \frac{10}{20} = \frac{12}{20} = \frac{3}{5}$ $\frac{3}{5}$	7) $5\frac{1}{2} \div \frac{1}{4} - \frac{7}{8}$ $\frac{11}{2} \times \frac{4}{1} - \frac{7}{8}$ $\frac{44}{2} - \frac{7}{8} =$ $21\frac{1}{8}$	8) $-\frac{5}{6} + 4\frac{1}{3} - \frac{1}{4}$ $-\frac{10}{12} + 4\frac{4}{12} - \frac{3}{12}$ $3\frac{1}{4}$
9) $3 - 4(8 - 6)$ $3 - 4(2)$ $3 - 8$ -5	10) $\frac{1}{2}(8 - 10) + 6$ $\frac{1}{2}(-2) + 6$ $-1 + 6 =$ 5	11) $8 - 5 + 2 \cdot 6 \div 3$ $8 - 5 + 12 \div 3$ $8 - 5 + 4$ 7	12) $-3(5 \cdot 4) + 12 \div 6$ $-3(20) + 12 \div 6$ $-60 + 2$ -58
13) $5(x+2y) - 2(x-3y)$ $5x + 10y - 2x + 6y$ $3x + 16y$	14) $-4(x-7) + x$ $-4x + 28 + x$ $-3x + 28$	15) $\frac{1}{2}(x-7) + 4x - 10$ $\frac{1}{2}x - 3.5 + 4x - 10$ $4\frac{1}{2}x - 13.5$	16) $8(x+4y) + 3(-4x+y)$ $8x + 32y - 12x + 3y$ $-4x + 35y$
17) $\frac{1}{5}(x+10) + 5x$ $\frac{1}{5}x + 2 + 5x$ $5\frac{1}{5}x + 2$	18) $-4.8(2 - 8.2x) + 6x - 3$ $-9.6 + 39.36x + 6x - 3$ $-12.6 + 45.36x$	19) $\frac{1}{2}(8y+2x) - \frac{3}{4}x$ $4y + 1x - \frac{3}{4}x$ $\frac{1}{4}x + 4y$	20) $-18x(3 - 4.6) - 10x$ $-54x + 82.8x - 10x$ 18.8x



EVALUATING EXPRESSIONS

Directions: Evaluate each expression for the given value(s).

1) $3x - 10 + 4$ if $x = 3$ $3(3) - 10 + 4$ $9 - 10 + 4$ $-1 + 4$ 3	2) $\frac{x}{2} + 6x$ if $x = -12$ $\frac{-12}{2} + 6(-12)$ $-6 - 72 = -78$	3) $8(x - y)$ if $x = 2, y = 6$ $8(2 - 6)$ $8(-4)$ -32	4) $x + xy$ if $x = 3, y = -2.5$ $3 + (3)(-2.5)$ $3 + (-7.5)$ -4.5
5) $(2x)^2 + 6$ if $x = -2$ $(2(-2))^2 + 6$ $(-4)^2 + 6$ $16 + 6 = 22$	6) $3x + 4y - 3x$ if $x = 2, y = 4$ $3(2) + 4(4) - 3(2)$ $6 + 16 - 6$ 16	7) $-10x + \frac{4}{x}$ if $x = -2$ $-10(-2) + \frac{4}{(-2)}$ $20 + (-2)$ 18	8) $3(8x - 10) + 5x$ if $x = \frac{1}{2}$ $3(8(\frac{1}{2}) - 10) + 5(\frac{1}{2})$ $3(4 - 10) + 2\frac{1}{2}$ $3(-6) + 2\frac{1}{2}$ $-18 + 2\frac{1}{2} = -15\frac{1}{2}$
9) $x + 8y - (x)^2$ if $x = -5, y = \frac{1}{4}$ $-5 + 8(\frac{1}{4}) - (-5)^2$ $-5 + 2 - 25$ -28	10) $(8x)^2 + 6x + 2$ if $x = -3$ $(8(-3))^2 + 6(-3) + 2$ $(-24)^2 - 18 + 2$ $576 - 18 + 2$ 560	11) $2x^2 + 4y^2 + xy$ if $x = \frac{1}{2}, y = 2$ $2(\frac{1}{2})^2 + 4(2)^2 + (\frac{1}{2})(2)$ $2(\frac{1}{4}) + 4(4) + 1$ $\frac{1}{2} + 16 + 1$ $17\frac{1}{2}$	12) $8x + 2y$ if $x = 1.5, y = -2.2$ $8(1.5) + 2(-2.2)$ $12 - 4.4$ 7.6
13) $\frac{5}{2}(x - 6) + 4$ if $x = 8$ $\frac{5}{2}(8 - 6) + 4$ $\frac{5}{2}(2) + 4$ $5 + 4 = 9$	14) $3x - 8x^2 + 7$ if $x = 4.5$ $3(4.5) - 8(4.5)^2 + 7$ $13.5 - 8(20.25) + 7$ $13.5 - 162 + 7$ -141.5	15) $-2x^2 + 8y$ if $x = 3, y = -9$ $-2(3)^2 + 8(-9)$ $-2(9) - 72$ $-18 - 72$ -90	16) $(-5x)^2 - 3x + x$ if $x = -3.5$ $(-5(-3.5))^2 - 3(-3.5) - 3.5$ $(17.5)^2 + 10.5 - 3.5$ $306.25 + 10.5 - 3.5$ 313.25



SOLVING EQUATIONS

Directions: Solve each equation. Round to the nearest tenth if needed.

1) $3x + 6 = 20$ $-6 -6$ $3x = 14$ $x = 4.7$	2) $-\frac{3}{4}x + 6 = 5\frac{5}{16}$ $-\frac{3}{4}x = -\frac{11}{16}$ $x = 11/12$	3) $7x + 5 = 68$ $7x = 63$ $x = 9$	4) $-\frac{7}{8} + 5x = 44\frac{1}{8}$ $5x = 45$ $x = 9$
5) $-2x - 5 = -23$ $+5 +5$ $-2x = -18$ $x = 9$	6) $7x + 6 + x = 62$ $8x + 6 = 62$ $-6 -6$ $8x = 56$ $x = 7$	7) $6 + 3x - 6x = -18$ $6 - 3x = -18$ $-6 -6$ $-3x = -24$ $x = 8$	8) $-6.5x + 1 = -29$ $-6.5x = -30$ $x = 4.6$
9) $3x - 4(8x - 6) = 20$ $3x - 32x + 24 = 20$ $-29x + 24 = 20$ $-29x = 4$ $x = -4/29$	10) $6x + 7 = -47$ $-7 -7$ $6x = -54$ $x = -9$	11) $-6 - 5x = -41$ $+6 +6$ $-5x = -35$ $x = 7$	12) $4x - 9 - 7x = -12$ $-3x - 9 = -12$ $+9 +9$ $-3x = -3$ $x = 1$
13) $3x - 2 - 7x = -22$ $-4x - 2 = -22$ $-4x = -20$ $x = 5$	14) $-54 = 2x + 7x + 9$ $-54 = 9x + 9$ $-9 -9$ $-63 = 9x$ $x = -7$	15) $\frac{1}{2}(x - 8) + 4x = 10$ $\frac{1}{2}x - 4 + 4x = 10$ $4.5x - 4 = 10$ $4.5x = 14$ $x = 3\frac{1}{9}$	16) $8(x + 4) + 3(-4x) = 32$ $8x + 32 - 12x = 32$ $-4x + 32 = 32$ $-4x = 0$ $x = 0$
17) $\frac{1}{5}(x + 10) + 5x = 25$ $\frac{1}{5}x + 2 + 5x = 25$ $5\frac{1}{5}x + 2 = 25$ $5\frac{1}{5}x = 23$ $x = 4.4$	18) $-4(2 - 8.2x) = 30$ $-8 + 32.8x = 30$ $32.8x = 38$ $x = 1.2$	19) $5 + 3x - x = 25$ $5 + 2x = 25$ $2x = 20$ $x = 10$	20) $6x + 4 - 7x = 88$ $-1x = 84$ $x = -84$



SOLVING EQUATIONS

Directions: Solve each equation. Round to the nearest tenth if needed.

1) $-2x+1-7x=-53$ $-9x+1=-53$ $-9x=-54$ $x=6$	2) $-\frac{x}{2}+2=5$ $-2-2$ $-\frac{x}{2}=3$ $-x=6$ $x=-6$	3) $7(x+5)=28$ $7x+35=28$ $-35-35$ $7x=-7$ $x=-1$	4) $6-3x=-2x$ $+3x+3x$ $6=1x$ $x=6$
5) $4x+2=122-6x$ $+6x+6x$ $10x+2=122$ $10x=120$ $x=12$	6) $-3+2x=-x-12$ $+x+x$ $-3+3x=-12$ $+3+3$ $3x=-9$ $x=-3$	7) $6(\frac{2}{3}+4x)=-260$ $4+24x=-260$ $24x=-264$ $x=-11$	8) $4(-2x+8)=-40$ $-8x+32=-40$ $-8x=-72$ $x=9$
9) $3(6x-2)=192$ $18x-6=192$ $18x=198$ $x=11$	10) $2(7-3x)=14$ $14-6x=14$ $-14-14$ $-6x=0$ $x=0$	11) $5x+4+3x=74$ $8x+4=74$ $8x=70$ $x=8.8$	12) $\frac{2}{3}x+\frac{5}{7}+2x=-\frac{13}{21}$ $2\frac{2}{3}x+\frac{5}{7}=-\frac{13}{21}$ $2\frac{2}{3}x=-\frac{28}{21}$ $x=-\frac{1}{2}$
13) $3(-\frac{3}{5}x+3)=14.4$ $-1.8x+9=14.4$ $-1.8x=5.4$ $x=3$	14) $-\frac{1}{3}(-4+2x)=4$ $1\frac{1}{3}-\frac{2}{3}x=4$ $-\frac{2}{3}x=2\frac{2}{3}$ $x=-4$	15) $-5(-2+2x)=13\frac{1}{3}$ $10-10x=13\frac{1}{3}$ $-10x=3\frac{1}{3}$ $x=-\frac{1}{3}$	16) $-\frac{1}{2}(-4-2x)=-12$ $2+1x=-12$ $x=-14$
17) $\frac{1}{5}(x+10)=5x+25$ $\frac{1}{5}x+2=5x+25$ $-4.8x+2=25$ $-4.8x=23$ $x=-4.8$	18) $-\frac{1}{2}(2-8x)=30$ $-1+4x=30$ $4x=31$ $x=7.8$	19) $9x-3=4x+22$ $5x-3=22$ $5x=25$ $x=5$	20) $6x+4-3x=2x+10$ $3x+4=2x+10$ $x+4=10$ $x=6$

WRITING EQUATIONS

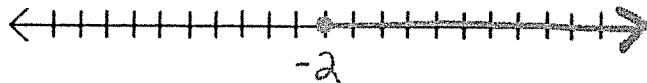
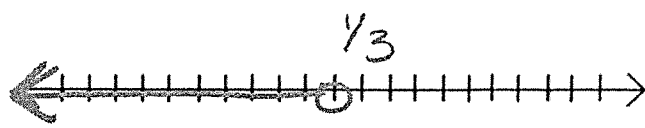
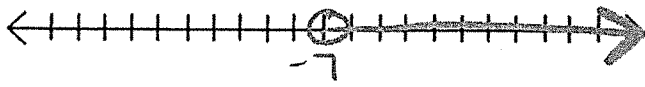
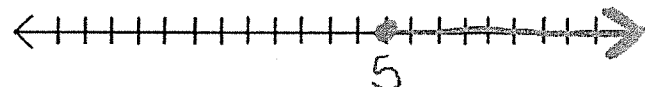
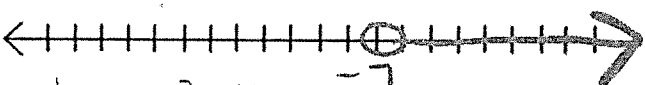
Directions: Write the equation represented by each situation.

1) Carl makes \$10.25 per hour, h, plus a daily bonus of \$25. Write an equation that represents his total earnings, t, each day. $t = 10.25h + 25$	2) It costs \$10 to enter a theme park and \$2 for each ticket, t. Write an equation that represents the total cost, c, of going to the theme park. $c = 10 + 2t$	3) James has \$150 in savings and earns an additional \$50 per week, w, cutting grass. Write an equation that represents the total, t, in his account. $t = 150 + 50w$
4) A shipping company charges a \$5.50 flat rate, plus \$0.20 per pound, p. Write an equation that represents the total cost, c, of shipping. $c = 5.5 + 0.2p$	5) Adam has \$60 on a gift card. He buys h hats for \$4.00 each. Write an equation that represents the amount left, a, on his gift card. $a = 60 - 4h$	6) A car rental company charges \$120 plus \$0.37 per mile, m. Write an equation that represents the total cost, c, of renting a car. $c = 120 + 0.37m$
7) Cora bought g bags of candy for \$1.45 each and a gallon of milk for \$3.49. Write an equation to represent the total amount, a, spent at the store. $a = 1.45g + 3.49$	8) Mya bought x shirts for \$14.50 each and used a \$20 coupon. Write an equation that represents the total amount, a, she spent. $a = 14.5x - 20$	9) Ken can run m miles at a pace of 6.30 minutes per mile. He ran slower for 10 minutes to warm up. Write an equation that represents the total time, t, Ken spent running. $t = 6.3m + 10$
10) Henry raised \$$x$ for the fundraiser. Darla raised \$5 less than twice as much as Henry. Write an equation that represents the total, t, amount raised by both Henry and Darla. $t = x + 2x - 5$	11) A scuba company charges \$20 for equipment rental plus \$5 per hour, h, for use. Write an equation that represents the total cost, c, of renting scuba equipment. $c = 20 + 5h$	12) Melissa earned \$1,200 last week. She is donating an equal amount, a, to three different charities. Write an equation that represents how much money Melissa has left, m. $m = 1200 - 3a$



SOLVING INEQUALITIES

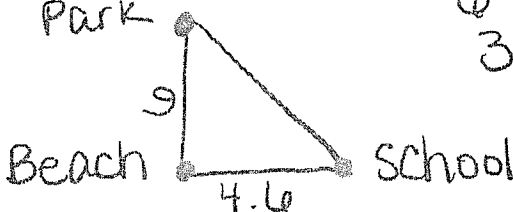
Directions: Solve each inequality. Round to the nearest tenth if needed.

1) $-7x+6 \leq 20$  $-7x+6 \leq 20$ $-7x \leq 14$ $x \geq -2$	2) $-3x+6 > 5$  $-3x+6 > 5$ $-3x > -1$ $x < \frac{1}{3}$		
3) $2x-7 > -21$  $2x-7 > -21$ $2x > -14$ $x > -7$	4) $3+3x-6x \leq -12$  $3+3x-6x \leq -12$ $3-3x \leq -12$ $-3x \leq -15$ $x \geq 5$		
5) $3x-\frac{1}{2}(8x-6) < 10$  $3x-\frac{1}{2}(8x-6) < 10$ $3x-4x+3 < 10$ $-1x < 7$ $x > -7$	6) $-5-2x \geq -21$  $-5-2x \geq -21$ $-2x \geq -16$ $x \leq 8$		
7) $12x-2-7x > -22$ $5x-2 > -22$ $5x > -20$ $x > -4$	8) $-20-2x > 5x-8$ $-20-7x > -8$ $-7x > 12$ $x < 1.7$	9) $\frac{1}{2}(-6x+2)+4x \geq 10$ $-3x+1+4x \geq 10$ $1x+1 \geq 10$ $x \geq 9$	10) $2(2x-4)-5(-4x) \leq -20$ $4x-8+20x \leq -20$ $24x-8 \leq -20$ $24x \leq -12$ $x \leq -\frac{1}{2}$
11) $2(x+1)+5x \geq -19$ $2x+2+5x \geq -19$ $7x+2 \geq -19$ $7x \geq -21$ $x \geq -3$	12) $4(2-1x) < 30$ $8-4x < 30$ $-4x < 22$ $x < -5.5$	13) $5+3x \leq 15+x$ $5+2x \leq 15$ $2x \leq 10$ $x \leq 5$	14) $6x+4 < 30$ $6x < 26$ $x < 4\frac{1}{3}$



THE PYTHAGOREAN THEOREM

Directions: Round to the nearest hundredth if needed.

1) In a right triangle, find the measure of b if a = 12 inches and c = 16 inches. $12^2 + b^2 = 16^2$ $144 + b^2 = 256$ $b^2 = 112 \quad b = 10.58$	2) In a right triangle, find the measure of a if b = 14 centimeters and c = 20 centimeters. $a^2 + 14^2 = 20^2$ $a^2 + 196 = 400$ $a^2 = 204 \quad a = 14.28$	3) In a right triangle, find the measure of c if a = 6.5 meters and b = 8 meters. $6.5^2 + 8^2 = c^2$ $42.25 + 64 = c^2$ $c^2 = 106.25 \quad c = 10.31$
4) In a right triangle, find the measure of c if a = 5 inches and b = 6 inches. $5^2 + 6^2 = c^2$ $25 + 36 = c^2$ $61 = c^2 \quad c = 7.81$	5) In a right triangle, find the measure of a if b = 19 feet and c = 26 feet. $a^2 + 19^2 = 26^2$ $a^2 + 361 = 676$ $a^2 = 315 \quad a = 17.75$	6) In a right triangle, find the measure of b if a = 19 inches and c = 22 inches. $19^2 + b^2 = 22^2$ $361 + b^2 = 484$ $b^2 = 123 \quad b = 11.09$
7) A park is 6 miles north of the beach. The beach is 4.6 miles west of the school. What is the distance of the straight line between the school and the park?  $6^2 + 4.6^2 = c^2$ $36 + 21.16 = c^2$ $57.16 = c^2$ $c = 7.6$		8) In a right triangle, find the measure of c if a = 15.5 centimeters and b = 16.5 centimeters. $15.5^2 + 16.5^2 = c^2$ $240.25 + 272.25 = c^2$ $c^2 = 512.5 \quad c = 22.64$
9) A 15 foot tall tree casts a shadow. The distance between the top of the tree and the end of the shadow is 22 feet. How long is the shadow? $15^2 + b^2 = 22^2$ $225 + b^2 = 484$ $b^2 = 259$ $b = 16.09$		10) In a right triangle, find the measure of a if b = 35 meters and c = 40 meters. $a^2 + 35^2 = 40^2$ $a^2 + 1225 = 1600$ $a^2 = 375 \quad a = 19.36$
11) In a right triangle, find the measure of b if a = 15 inches and c = 20 inches. $15^2 + b^2 = 20^2$ $225 + b^2 = 400$ $b^2 = 175 \quad b = 13.22$	12) A television is 30 inches tall and 42 inches long. What is the length of the straight line from the top right corner of the TV to the bottom left corner? $30^2 + 42^2 = c^2$ $900 + 1764 = c^2$ $c^2 = 2664$ $c = 51.61$	

Name: _____

Geometry

Date: _____ Per: _____

Unit 1: Geometry Basics

Quiz 1-2: Angle Measures & Relationships

In the diagram below, $\overline{DG} \perp \overline{DF}$. Use the diagram from questions 1-7.

1. Name the sides of $\angle 4$.

2. Name the vertex of $\angle 2$.

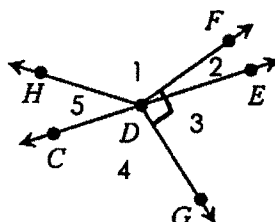
3. Give another name for $\angle 3$.

4. Classify $\angle 5$.

5. Classify $\angle CDE$.

6. If $m\angle 5 = 42^\circ$ and $m\angle 1 = 117^\circ$, find $m\angle CDF$.

7. If $m\angle 3 = 73^\circ$, $m\angle FDE$.



1. $\overrightarrow{DC}, \overrightarrow{DG}$

2. D

3. $\angle EDG$

4. acute

5. straight

6. 159°

7. 17°

In the diagram below, $\overline{BC}$ bisects $\angle FBE$. Use the diagram for questions 8-10.

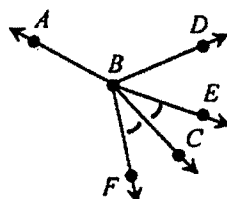
8. If $m\angle ABF = (7x + 20)^\circ$, $m\angle FBC = (2x - 5)^\circ$, and $m\angle ABC = 159^\circ$, find the value of x .

$$7x + 20 + 2x - 5 = 159$$

$$9x + 15 = 159$$

$$9x = 144$$

$$x = 16$$



8. 16

9. 34°

10. 62°

9. If $m\angle DBC = (12x - 3)^\circ$, $m\angle DBE = (5x + 12)^\circ$, and $m\angle EBC = (3x + 13)^\circ$, find $m\angle EBC$.

$$12x - 3 = 5x + 12 + 3x + 13$$

$$12x - 3 = 8x + 25$$

$$4x - 3 = 25$$

$$4x = 28$$

$$x = 7$$

$$m\angle EBC = 3(7) + 13 = 34$$

10. If $m\angle FBC = (10x - 9)^\circ$, $m\angle CBE = (4x + 15)^\circ$, find $m\angle FBE$.

$$10x - 9 = 4x + 15$$

$$6x - 9 = 15$$

$$6x = 24$$

$$x = 4$$

$$m\angle CBE: 4(4) + 15 = 31$$

$$m\angle FBE: 2(31) = 62$$

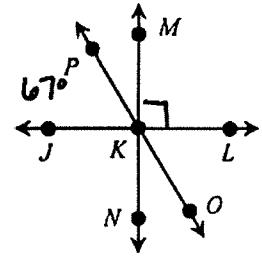
In the diagram to the right, $\overline{JL} \perp \overline{MN}$. Use the diagram from questions 11-14.

11. Classify $\angle PKM$ and $\angle NKO$.
(Check all names that apply.)

- ☐ Adjacent
☒ Vertical
☐ Complementary
☐ Supplementary
☐ Linear Pair

12. Classify $\angle NKO$ and $\angle OKL$.
(Check all names that apply.)

- ☒ Adjacent
☐ Vertical
☒ Complementary
☐ Supplementary
☐ Linear Pair



If $m\angle JKP = 67^\circ$, find each measure:

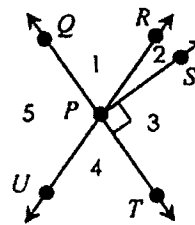
13. $m\angle PKL = \underline{113^\circ}$

14. $m\angle NKO = \underline{23^\circ}$

Use the diagram below for questions 15-17.

15. If $m\angle 1 = (7x - 19)^\circ$, and $m\angle 2 = (x + 5)^\circ$, find $m\angle 2$.

$$\begin{aligned} 7x - 19 + x + 5 &= 90 \\ 8x - 14 &= 90 \\ 8x &= 104 \\ x &= 13 \end{aligned}$$



15. $\underline{18^\circ}$

16. $\underline{79^\circ}$

17. $\underline{151^\circ}$

18. $\underline{131^\circ}$

19. $\underline{34^\circ}$

20. $\underline{147^\circ}$

16. If $m\angle 1 = (6x + 25)^\circ$, and $m\angle 4 = (10x - 11)^\circ$, find $m\angle 1$.

$$\begin{aligned} 6x + 25 &= 10x - 11 \\ 36 &= 4x \\ x &= 9 \end{aligned}$$

$$m\angle 1 = 6(9) + 25$$

17. If $m\angle 4 = (3x + 7)^\circ$, and $m\angle 5 = (9x - 43)^\circ$, find $m\angle UPS$.

$$\begin{aligned} 3x + 7 + 9x - 43 &= 180 \\ 12x - 36 &= 180 \\ 12x &= 216 \\ x &= 18 \end{aligned}$$

$$m\angle 4 = 3(18) + 7 = 61$$

$$m\angle UPS = 61 + 90$$

18. If $\angle W$ and $\angle V$ are supplementary angles and $m\angle V = 49^\circ$, find $m\angle W$.

$$180 - 49$$

19. If $\angle 1$ and $\angle 2$ are vertical angles, $\angle 2$ and $\angle 3$ are complementary angles, and $m\angle 3 = 56^\circ$, find $m\angle 1$.

$$90 - 56 = 34 \quad (m\angle 2)$$

20. If $\angle 1$ and $\angle 2$ form a linear pair and $m\angle 1$ is 18 degrees less than five times the measure of $\angle 2$, find $m\angle 1$.

$$\begin{aligned} m\angle 1 &= 5x - 18 \\ m\angle 2 &= x \end{aligned}$$

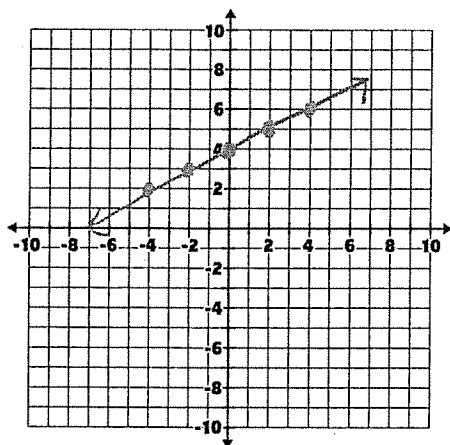
$$\begin{aligned} 6x - 18 &= 180 \\ 6x &= 198 \\ x &= 33 \end{aligned}$$

$$m\angle 1 = 5(33) - 18$$

➤➤ GRAPHING LINEAR EQUATIONS

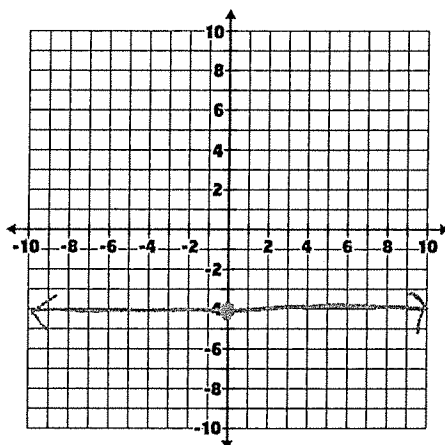
1) Graph the equation:

$$y = \frac{1}{2}x + 4$$



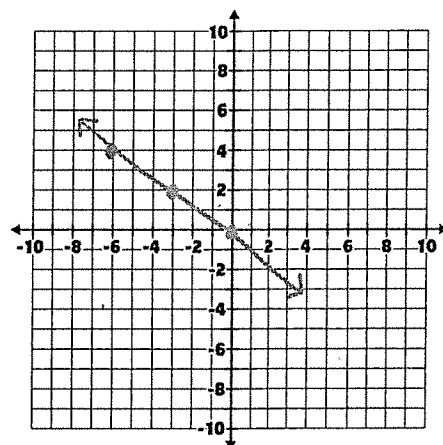
2) Graph the equation:

$$y = -4$$



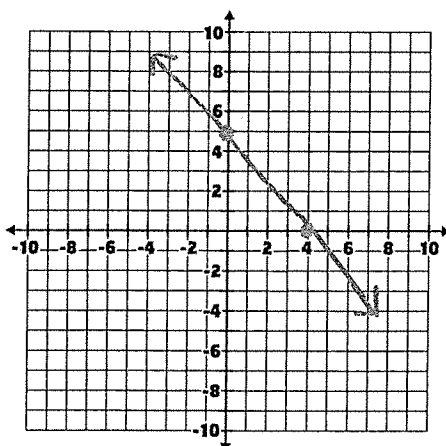
3) Graph the equation:

$$y = -\frac{2}{3}x$$



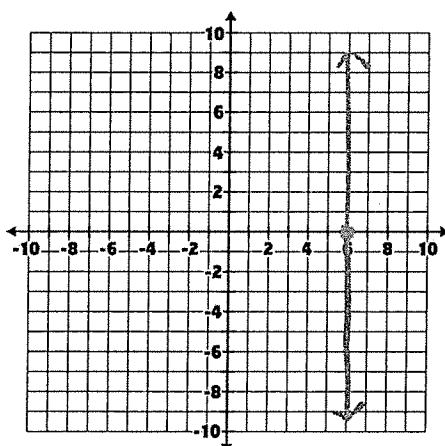
4) Graph the equation:

$$y = -\frac{5}{4}x + 5$$



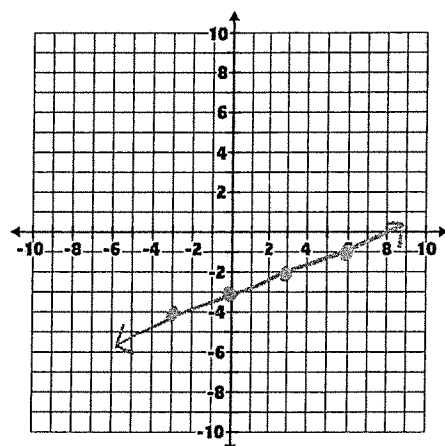
5) Graph the equation:

$$x = 6$$



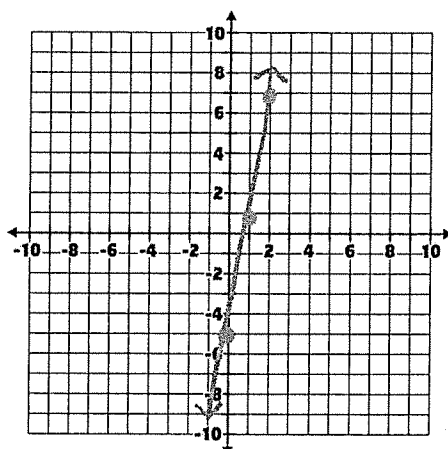
6) Graph the equation:

$$y = \frac{1}{3}x - 3$$



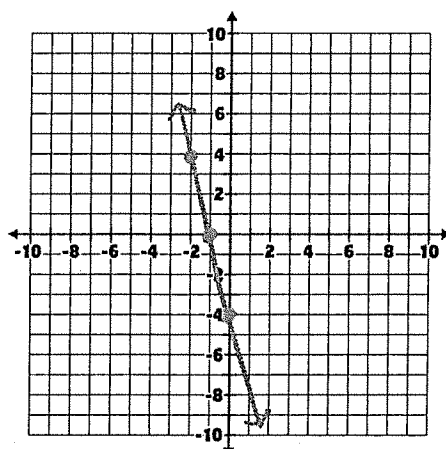
7) Graph the equation:

$$y = 6x - 5$$



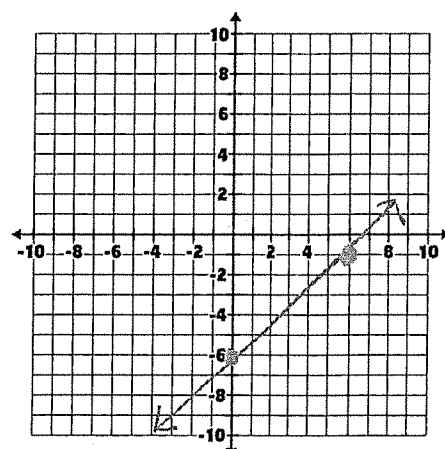
8) Graph the equation:

$$y = -4x - 4$$



9) Graph the equation:

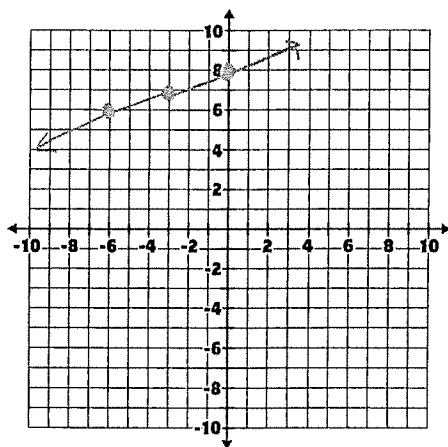
$$y = \frac{5}{6}x - 6$$



GRAPHING LINEAR EQUATIONS

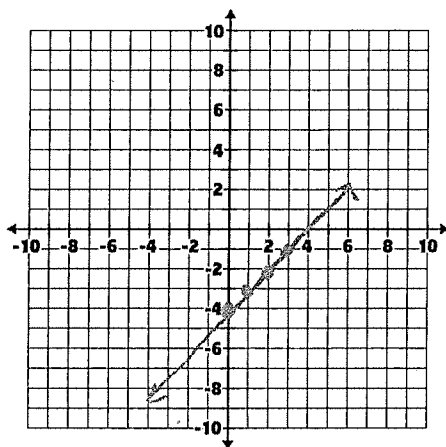
1) Graph the equation:

$$y = \frac{1}{3}x + 8$$



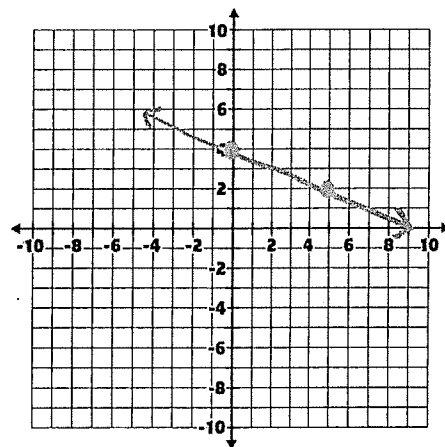
2) Graph the equation:

$$y = x - 4$$



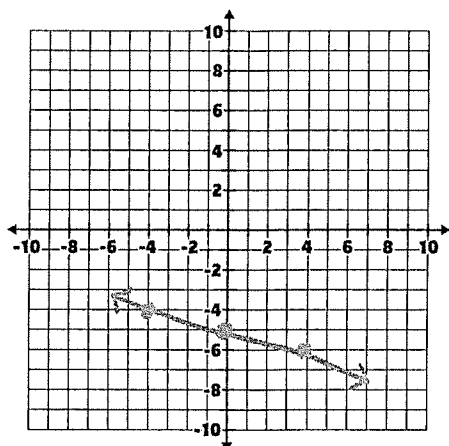
3) Graph the equation:

$$y = -\frac{2}{5}x + 4$$



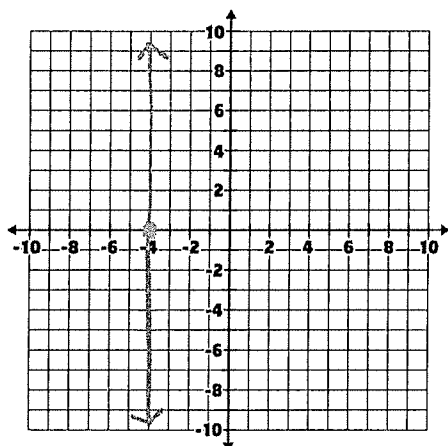
4) Graph the equation:

$$y = -\frac{1}{4}x - 5$$



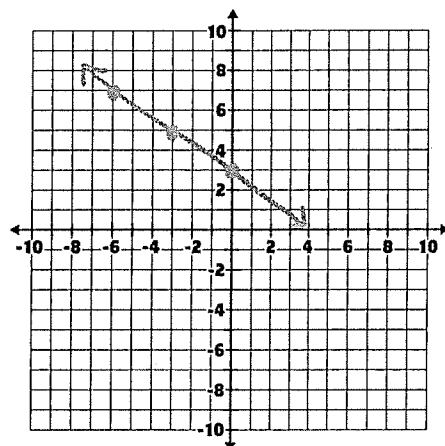
5) Graph the equation:

$$x = -4$$



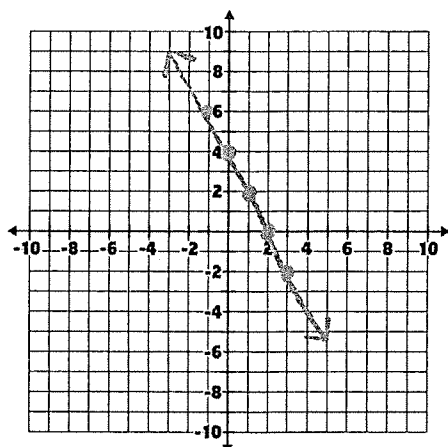
6) Graph the equation:

$$y = -\frac{2}{3}x + 3$$



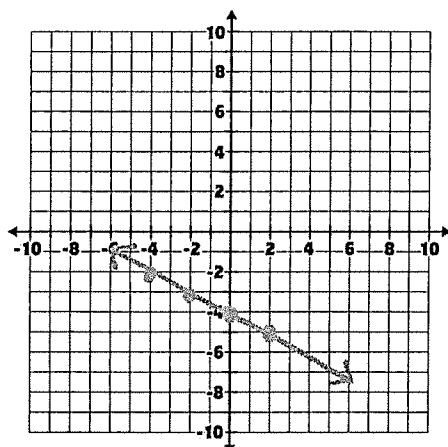
7) Graph the equation:

$$y = -2x + 4$$



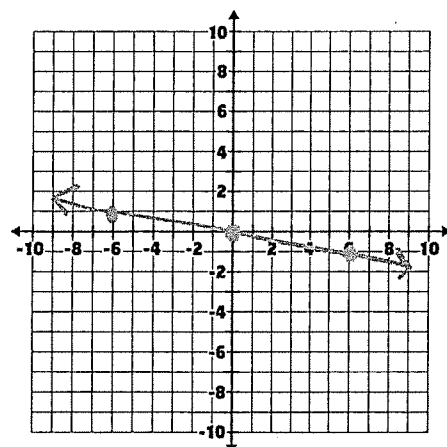
8) Graph the equation:

$$y = -\frac{1}{2}x - 4$$



9) Graph the equation:

$$y = -\frac{1}{6}x$$





MEASURES OF CENTER

Directions: Read each problem carefully. Round to the nearest tenth if necessary.

Use the test scores to answer questions 1 – 4.

62 80 65 75 99 80 100 98 65 57
46 87 80 90 72 98 82 65 66 84

1) What is the average test score?

$$1551 \div 20 = 77.6$$

2) What is the mode of the test scores?

65 and 80

3) What is the range of the test scores?

$$100 - 46 = 54$$

4) What is the median test score?

80

Use the newborn weights (in pounds) to answer questions 5 – 8.

4.2 6.8 10.2 9.8 9.3 8.6 7.4 5 6.2 8.7 9.2
9 7.3 5.2 6 6.8 8.4 7 7.5 8 8.3 11

5) What is the average newborn weight?

7.7

6) What is the mode of the newborn weights?

6.8

7) What is the range of the newborn weights?

6.8

8) What is the median newborn weight?

7.75

Use the salaries (in dollars) to answer questions 9 – 12.

30,450 60,300 112,080 80,500 72,600 42,000
54,000 67,500 23,750 52,000 64,800 70,700

9) What is the average salary?

\$60,890

10) What is the mode of the salaries?

no mode

11) What is the range of the salaries?

\$88,330

12) What is the median salary?

\$62,550

➤➤ AREA, CIRCUMFERENCE & PERIMETER

Directions: Round to the nearest hundredth if needed. Use 3.14 for π .

- 1) Farmer Johnson is fencing in an area for his horses. The field measures 150 feet by 165.5 feet. How much fencing will he need?

$$2(150) + 2(165.5) = 631 \text{ ft.}$$

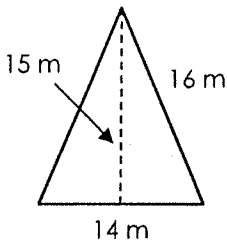
If fencing costs \$1.50 per foot. How much will he spend on fencing?

$$\$946.50$$

- 2) A circular pool needs a cover. If the pool has a radius of 6.75 feet, what will the area of pool cover be?

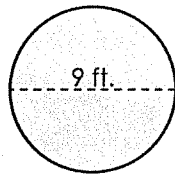
$$143.07 \text{ ft.}^2$$

- 3) Find the area.



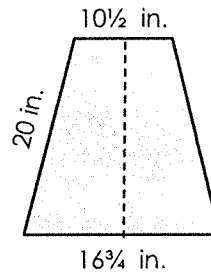
$$\frac{1}{2}(14 \times 15) = 105 \text{ m.}^2$$

- 4) Find the area.



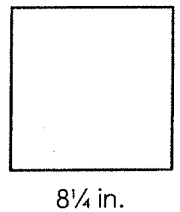
$$63.59 \text{ ft.}^2$$

- 5) Find the perimeter.



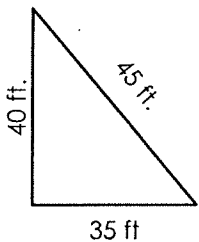
$$67.25 \text{ in.}$$

- 6) Find the perimeter of the square.



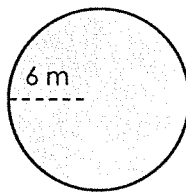
$$33 \text{ in.}$$

- 7) Find the area.



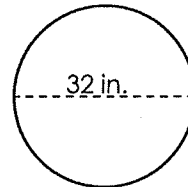
$$700 \text{ ft.}^2$$

- 8) Find the circumference.



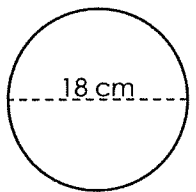
$$37.68 \text{ m}$$

- 9) Find the area.



$$803.84 \text{ in.}^2$$

- 10) Find the circumference.



$$56.52 \text{ cm.}$$

- 11) A square park needs grass. Sod is sold by the square foot. If the park has a side length of 32.5 feet, how much sod is needed?

$$1,056.25 \text{ ft.}^2$$

- 12) Anna is putting a ribbon around a circular picture frame. The frame has a diameter of 12.7 inches. How long does the ribbon need to be?

$$39.88 \text{ in.}$$

➤ RANDOM & SIMPLE PROBABILITY

1) A teacher wants to find out how his students feel about the last test. He surveys 8 random students from one of his eight classes. Is the sample random? Explain.

No. Only one class was surveyed.

2) A cell phone company sends flyers to 800 randomly selected subscribers advertising a new sale. Is the sample random? Explain.

Yes. They were randomly chosen and the sample was large.

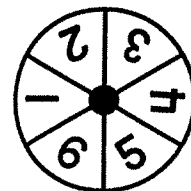
3) How many outcomes are there when randomly selecting a letter from the alphabet?

26 outcomes

4) How many outcomes are there when flipping a coin?

2 outcomes

5) How many outcomes are on the spinner?



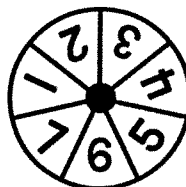
6 outcomes

6) Find the probability of rolling a 4 or smaller on a number cube.

$$\frac{4}{6} = \frac{2}{3}$$

7) Find the probability of landing on an even number.

$$\frac{3}{6} = \frac{1}{2}$$



8) Find the probability of picking a red card from a standard deck of cards.

$$\frac{26}{52} = \frac{1}{2}$$

For #9 – 12: There are 8 green, 6 blue and 4 red erasers in a drawer. One eraser is chosen at random. Express each probability as a fraction in simplest form.

9) Find the probability of picking a green eraser.

$$\frac{8}{18} = \frac{4}{9}$$

10) Find the probability of picking a red eraser.

$$\frac{4}{18} = \frac{2}{9}$$

11) Find the probability of picking a blue or red eraser.

$$\frac{10}{18} = \frac{5}{9}$$

12) Find the probability of not picking a blue eraser.

$$\frac{12}{18} = \frac{2}{3}$$

For #13 – 16: A spinner is labeled 1 – 13. The spinner is spun once. Express each probability as a decimal.

13) Find the probability of spinning an odd number.

$$\frac{7}{13} = 0.54$$

14) Find the probability of spinning a number greater than 4.

$$\frac{9}{13} = 0.69$$

15) Find the probability of landing on 5 or an even number.

$$\frac{7}{13} = 0.54$$

16) Find the probability of landing on a number that is not 11 or 13.

$$\frac{11}{13} = 0.85$$



COMPOUND PROBABILITY

- 1) A pizza company offers pizza in 3 different sizes, with two different sauce options and three different cheese options. How many possible outcomes are there?

$$3 \times 2 \times 3 = 18 \text{ outcomes}$$

- 2) A spinner labeled 1 – 6 is spun twice. How many possible outcomes are there?

$$6 \times 6 = 36 \text{ outcomes}$$

- 3) The numbers 2 – 12 are written on cards and placed in a bag. What is the probability of picking an even number, replacing it and then picking a 7?

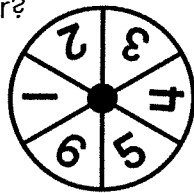
$$\frac{6}{11} \times \frac{1}{11} = \frac{6}{121}$$

- 4) A jar contains chocolate candies. There are 12 red, 17 blue, 5 green and 6 orange. What is the probability of picking either a green or blue candy, replacing it and then picking an orange candy?

$$\frac{11}{20} \times \frac{6}{20} = \frac{33}{400}$$

- 5) The spinner is spun twice. What is the probability of landing on a number less than three and then an odd number?

$$\frac{1}{2} \times \frac{2}{6} = \frac{1}{6}$$



- 6) Gina rolls a blue number cube and a yellow number cube. What is the probability of landing on an even number on the blue cube and a number greater than four on the yellow cube?

$$\frac{1}{2} \times \frac{2}{6} = \frac{2}{12} = \frac{1}{6}$$

- 7) There are 13 boys and 7 girls in a Spanish class. The teacher selects two students to run an errand. How many possible outcomes are there if she selects a boy followed by a girl?

$$13 \times 7 = 91$$

- 8) A random number generator app on your phone generates two numbers between 0 and 8. What is the probability that the first number is less than three and the second number is 6?

$$\frac{3}{9} \times \frac{1}{9} = \frac{3}{81} = \frac{1}{27}$$

- 9) Addie selects from 12 shirts, 4 pair of pants, 5 jackets and 2 pair of shoes. How many possible outfits can she make?

$$12 \times 4 \times 5 \times 2 \\ 48 \times 10 \\ 480$$

- 10) A number cube is rolled and a coin is flipped. How many possible outcomes are there

$$6 \times 2 = 12$$

Name: _____

Unit 2: Equations & Inequalities

Date: _____ Bell: _____

Homework 1: Multi-Step Equations

**** This is a 2-page document! ******Directions:** Solve each equation. **SHOW ALL STEPS!**

1. $-4x - 7 - 3x + 4 = 25$

$$\begin{array}{r} -7x - 3 = 25 \\ +3 \quad +3 \\ \hline -7x = 28 \\ \frac{-7}{-7} \quad \frac{-7}{-7} \end{array}$$

$$\boxed{x = -4}$$

2. $-4(7a + 5) = -160$

$$\begin{array}{r} -28a - 20 = -160 \\ +20 \quad +20 \\ \hline -28a = -140 \\ \frac{-28a}{-28} = \frac{-140}{-28} \end{array}$$

$$\boxed{a = 5}$$

3. $3k + 2(5k - 3) = 7$

$$\begin{array}{r} 3k + 10k - 6 = 7 \\ 13k - 6 = 7 \\ +6 \quad +6 \\ \hline 13k = 13 \\ \frac{13k}{13} = \frac{13}{13} \end{array}$$

$$\boxed{k = 1}$$

4. $-79 = 7w + 3(4w - 1)$

$$\begin{array}{r} -79 = 7w + 12w - 3 \\ -79 = 19w - 3 \\ +3 \quad +3 \\ \hline -76 = 19w \\ \frac{-76}{19} = \frac{19w}{19} \end{array}$$

$$\boxed{-4 = w}$$

5. $9 - 4(2p - 1) = 41$

$$\begin{array}{r} 9 - 8p + 4 = 41 \\ -8p + 13 = 41 \\ -13 \quad -13 \\ \hline -8p = 28 \\ \frac{-8p}{-8} = \frac{28}{-8} \end{array}$$

$$\boxed{p = -\frac{7}{2}}$$

6. $y - 3(2y - 7) = 76$

$$\begin{array}{r} y - 6y + 21 = 76 \\ -5y + 21 = 76 \\ -21 \quad -21 \\ \hline -5y = 55 \\ \frac{-5y}{-5} = \frac{55}{-5} \end{array}$$

$$\boxed{y = -11}$$

7. $15 - 5(4c - 7) = 50$

$$15 - 20c + 35 = 50$$

$$-20c + 50 = 50$$

$$\begin{array}{r} -50 \\ -50 \end{array}$$

$$\frac{-20c}{-20} = \frac{0}{-20}$$

$$\boxed{c = 0}$$

8. $-(6h + 7) + 8 = -19$

$$-6h - 7 + 8 = -19$$

$$-6h + 1 = -19$$

$$\begin{array}{r} -1 \\ -1 \end{array}$$

$$\frac{-6h}{-6} = \frac{-20}{-6}$$

$$\boxed{h = \frac{10}{3}}$$

9. $-\frac{1}{3}(9x + 42) - 5x = -70$

$$-3x - 14 - 5x = -70$$

$$-8x - 14 = -70$$

$$\begin{array}{r} +14 \\ +14 \end{array}$$

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

$$\boxed{x = 7}$$

10. $8 = -18 + \frac{3}{8}(16 - 40n)$

$$8 = -18 + 6 - 15n$$

$$8 = -12 - 15n$$

$$\begin{array}{r} +12 \\ +12 \end{array}$$

$$\frac{20}{-15} = \frac{-15n}{-15}$$

$$\boxed{-\frac{4}{3} = n}$$

11. $2(5v + 3) - 4(7v + 1) = -88$

$$10v + 6 - 28v - 4 = -88$$

$$-18v + 2 = -88$$

$$\begin{array}{r} -2 \\ -2 \end{array}$$

$$\frac{-18v}{-18} = \frac{-90}{-18}$$

$$\boxed{v = 5}$$

12. $7(3r - 1) - (r + 5) = -52$

$$21r - 7 - r - 5 = -52$$

$$20r - 12 = -52$$

$$\begin{array}{r} +12 \\ +12 \end{array}$$

$$\frac{20r}{20} = \frac{-40}{20}$$

$$\boxed{r = -2}$$

Name: _____

Unit 2: Equations & Inequalities

Date: _____ Bell: _____

Homework 2: Variables on Both Sides

**** This is a 2-page document! ******Directions:** Solve each equation. **SHOW ALL STEPS!**

1. $4x + 1 = 2x - 5$

$$\begin{array}{r} -2x \quad -2x \\ \hline 2x + 1 = -5 \\ -1 \quad -1 \\ \hline 2x = -6 \\ \frac{2x}{2} = \frac{-6}{2} \end{array}$$

$$\boxed{x = -3}$$

2. $y - 3 = -3y - 43$

$$\begin{array}{r} +3y \quad +3y \\ \hline 4y - 3 = -43 \\ +3 \quad +3 \\ \hline 4y = -40 \\ \frac{4y}{4} = \frac{-40}{4} \end{array}$$

$$\boxed{y = -10}$$

3. $7 - 14m = 2m - 5$

$$\begin{array}{r} +14m \quad +14m \\ \hline 7 = 16m - 5 \\ +5 \quad +5 \\ \hline 12 = 16m \\ \frac{12}{16} = \frac{16m}{16} \end{array}$$

$$\boxed{\frac{3}{4} = m}$$

4. $-10b + 5 = 7b + 5$

$$\begin{array}{r} +10b \quad +10b \\ \hline 5 = 17b + 5 \\ -5 \quad -5 \\ \hline 0 = 17b \\ \frac{0}{17} = \frac{17b}{17} \end{array}$$

$$\boxed{0 = b}$$

5. $r + 15 = 4r - 6$

$$\begin{array}{r} -r \quad -r \\ \hline 15 = 3r - 6 \\ +6 \quad +6 \\ \hline 21 = 3r \\ \frac{21}{3} = \frac{3r}{3} \end{array}$$

$$\boxed{7 = r}$$

6. $10 - 2v = -5v - 50$

$$\begin{array}{r} +5v \quad +5v \\ \hline 10 + 3v = -50 \\ -10 \quad -10 \\ \hline 3v = -60 \\ \frac{3v}{3} = \frac{-60}{3} \end{array}$$

$$\boxed{v = -20}$$

$$7. 3(5y + 1) = 18y$$

$$15y + 3 = 18y$$

$$\begin{array}{r} -15y \quad -15y \\ \hline \end{array}$$

$$\frac{3}{3} = \frac{3y}{3}$$

$$\boxed{1 = y}$$

$$8. 4 - 3x = 8 - 4x$$

$$\begin{array}{r} +4x \quad +4x \\ \hline 4 + x = 8 \\ -4 \quad -4 \\ \hline \end{array}$$

$$\boxed{x = 4}$$

$$9. 8(2w - 2) = 7(3w + 2)$$

$$16w - 16 = 21w + 14$$

$$\begin{array}{r} -16w \quad -16w \\ \hline \end{array}$$

$$\begin{array}{r} -16 = 5w + 14 \\ -14 \quad -14 \\ \hline \end{array}$$

$$\frac{-30}{5} = \frac{5w}{5}$$

$$\boxed{-6 = w}$$

$$10. 3(5x + 2) = 2(3x - 6)$$

$$15x + 6 = 6x - 12$$

$$\begin{array}{r} -6x \quad -6x \\ \hline \end{array}$$

$$\begin{array}{r} 9x + 6 = -12 \\ -6 \quad -6 \\ \hline \end{array}$$

$$\frac{9x}{9} = \frac{-18}{9}$$

$$\boxed{x = -2}$$

$$11. 6(m - 1) = 3(3m + 5)$$

$$6m - 6 = 9m + 15$$

$$\begin{array}{r} -6m \quad -6m \\ \hline \end{array}$$

$$\begin{array}{r} -6 = 3m + 15 \\ -15 \quad -15 \\ \hline \end{array}$$

$$\frac{-21}{3} = \frac{3m}{3}$$

$$\boxed{-7 = m}$$

$$12. 7(p + 3) + 9 = 5(p - 2) - 3p$$

$$7p + 21 + 9 = 5p - 10 - 3p$$

$$7p + 30 = 2p - 10$$

$$\begin{array}{r} -2p \quad -2p \\ \hline \end{array}$$

$$\begin{array}{r} 5p + 30 = -10 \\ -30 \quad -30 \\ \hline \end{array}$$

$$\frac{5p}{5} = \frac{-40}{5}$$

$$\boxed{p = -8}$$

Name: _____

Unit 2: Equations & Inequalities

Date: _____ Bell: _____

Homework 3: No Solution/Infinite Solution

Directions: Solve each equation. **SHOW ALL STEPS!**

1. $2(n + 2) = 4n + 1 - 2n$

$$\begin{array}{r} 2n + 4 = 2n + 1 \\ -2n \quad -2n \\ \hline 4 \neq 1 \end{array}$$

 $\boxed{\emptyset}$

2. $-15 - 3w = 4w - 2w$

$$\begin{array}{r} -15 - 3w = 2w \\ +3w \quad +3w \\ \hline -15 = 5w \\ \frac{-15}{5} = \frac{5w}{5} \end{array}$$

 $\boxed{-3 = w}$

3. $2(x + 4) = 4x + 3 - 2x + 5$

$$\begin{array}{r} 2x + 8 = 2x + 8 \\ -2x \quad -2x \\ \hline 8 = 8 \end{array}$$

 $\boxed{\infty}$

4. $4(2r - 1) = -2(3r + 16)$

$$\begin{array}{r} 8r - 4 = -6r - 32 \\ +6r \quad +6r \\ \hline 14r - 4 = -32 \\ +4 \quad +4 \\ \hline 14r = -28 \end{array}$$

 $\boxed{r = -2}$

5. $3a - 6a + 2 = 8a + 20 - 5a$

$$\begin{array}{r} -3a + 2 = 3a + 20 \\ +3a \quad +3a \\ \hline 2 = 6a + 20 \\ -20 \quad -20 \\ \hline -18 = 6a \end{array}$$

$\frac{-18}{6} = \frac{6a}{6}$

 $\boxed{a = -3}$

6. $-(v + 4) + 5 = 4v + 1 - 5v$

$$\begin{array}{r} -v - 4 + 5 = -v + 1 \\ -v + 1 = -v + 1 \\ +v \quad +v \\ \hline 1 = 1 \end{array}$$

 $\boxed{\infty}$

7. $8 - 6m = 4m + 48$

$$\begin{array}{r} +6m \quad +6m \\ \hline 8 = 10m + 48 \\ -48 \quad -48 \\ \hline -40 = 10m \\ \frac{-40}{10} = \frac{10m}{10} \end{array}$$

 $\boxed{m = -4}$

8. $11 + 3p - 7 = 6p + 5 - 3p$

$$\begin{array}{r} 3p + 4 = 3p + 5 \\ -3p \quad -3p \\ \hline 4 \neq 5 \end{array}$$

 $\boxed{\emptyset}$

9. $4y = 38 - \frac{1}{2}(4y + 16)$

$$\begin{array}{r} 4y = 38 - 2y - 8 \\ 4y = -2y + 30 \\ +2y \quad +2y \\ \hline 6y = 30 \\ \frac{6y}{6} = \frac{30}{6} \end{array}$$

 $\boxed{y = 5}$

10. $8x + 11 = 2(4x - 7) + 25$

$$\begin{array}{r} 8x + 11 = 8x - 14 + 25 \\ 8x + 11 = 8x + 11 \\ -8x \quad -8x \\ \hline 11 = 11 \end{array}$$

 $\boxed{\infty}$

Name: _____

Unit 2: Equations & Inequalities

Date: _____ Bell: _____

Homework 4: Proportions

Directions: Solve each equation. **SHOW ALL STEPS!**

$$1. \frac{x}{4} = \frac{3}{2} \quad 2x = 4 \cdot 3$$

$$\frac{2x}{2} = \frac{12}{2}$$

$$\boxed{x=6}$$

$$2. \frac{f+3}{12} = \frac{7}{2}$$

$$2(f+3) = 12 \cdot 7$$

$$2f+6 = 84$$

$$\underline{-6 \quad -6}$$

$$2f = 78$$

$$\frac{2f}{2} = \frac{78}{2}$$

$$\boxed{f=39}$$

$$3. \frac{4}{n+9} = \frac{2}{7}$$

$$2(n+9) = 4 \cdot 7$$

$$2n+18 = 28$$

$$\underline{-18 \quad -18}$$

$$\frac{2n}{2} = \frac{10}{2}$$

$$\boxed{n=5}$$

$$4. \frac{3}{8} = \frac{s-2}{24}$$

$$8(s-2) = 3 \cdot 24$$

$$8s-16 = 72$$

$$\underline{+16 \quad +16}$$

$$\frac{8s}{8} = \frac{88}{8}$$

$$\boxed{s=11}$$

$$5. \frac{3}{10} = \frac{b+7}{20}$$

$$10(b+7) = 3 \cdot 20$$

$$10b+70 = 60$$

$$\underline{-70 \quad -70}$$

$$\frac{10b}{10} = \frac{-10}{10}$$

$$\boxed{b=-1}$$

$$6. \frac{3}{16y} = \frac{1}{y+13}$$

$$16y = 3(y+13)$$

$$16y = 3y + 39$$

$$\underline{-3y \quad -3y}$$

$$\frac{13y}{13} = \frac{39}{13}$$

$$\boxed{y=3}$$

$$7. \frac{m}{3} = \frac{m+4}{7}$$

$$7m = 3(m+4)$$

$$7m = 3m + 12$$

$$\underline{-3m \quad -3m}$$

$$\frac{4m}{4} = \frac{12}{4}$$

$$\boxed{m=3}$$

$$8. \frac{a}{2} = \frac{a-4}{6}$$

$$2(a-4) = 6a$$

$$2a-8 = 6a$$

$$\underline{-2a \quad -2a}$$

$$\frac{-8}{4} = \frac{4a}{4}$$

$$\boxed{a=-2}$$

$$9. \frac{x+2}{3} = \frac{x+4}{5}$$

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

$$5x+10 = 3x+12$$

$$\underline{-3x \quad -3x}$$

$$2x+10 = 12$$

$$\underline{-10 \quad -10}$$

$$\frac{2x}{2} = \frac{2}{2}$$

$$\boxed{x=1}$$

$$10. \frac{n+8}{5} = \frac{n-1}{2}$$

$$2(n+8) = 5(n-1)$$

$$2n+16 = 5n-5$$

$$\underline{-2n \quad -2n}$$

$$16 = 3n-5$$

$$\underline{+5 \quad +5}$$

$$\frac{21}{3} = \frac{3n}{3}$$

$$\boxed{n=7}$$

$$11. \frac{p-5}{p+1} = \frac{2}{3}$$

$$3(p-5) = 2(p+1)$$

$$3p-15 = 2p+2$$

$$\underline{-2p \quad -2p}$$

$$p-15 = 2$$

$$\underline{+15 \quad +15}$$

$$\boxed{p=17}$$

$$12. \frac{x+2}{6} = \frac{2x-10}{8}$$

$$8(x+2) = 6(2x-10)$$

$$8x+16 = 12x-60$$

$$\underline{-8x \quad -8x}$$

$$16 = 4x-60$$

$$\underline{+60 \quad +60}$$

$$\frac{76}{4} = \frac{4x}{4}$$

$$\boxed{x=19}$$



MIXED REVIEW

Directions: Read each problem carefully. Round to the nearest hundredth if needed.

1) Simplify.

$$\begin{aligned} & -2(5x+3y)-2(3x-y) \\ & -10x-6y-6x+2y \\ & -16x-4y \end{aligned}$$

2) Solve.

$$\begin{aligned} -8+3x-6 &= -2 \\ -14+3x &= -2 \\ 3x &= 12 \\ x &= 4 \end{aligned}$$

3) Solve $x + xy$

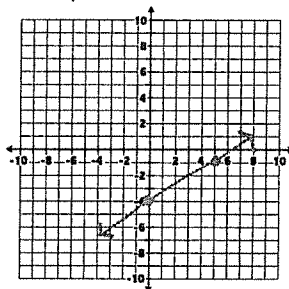
$$\begin{aligned} \text{if } x &= \frac{1}{2}, y = 2.5 \\ \frac{1}{2} + \left(\frac{1}{2}\right)(2.5) \\ \frac{1}{2} + 1.25 &= 1.75 \end{aligned}$$

4) Ben drove 584 miles in 8.2 hours. What was his average rate of speed?

$$\begin{aligned} 584 &= r(8.2) \\ r &= 71.22 \text{ mph} \end{aligned}$$

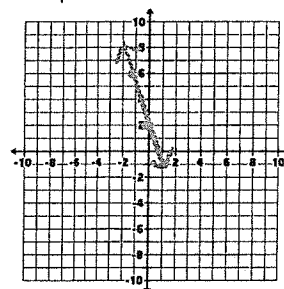
5) Graph the equation

$$y = \frac{3}{5}x - 4$$



6) Graph the equation

$$y = -4x + 2$$



7) How do you find the mean of a set of data?

add all numbers and divide by the number of pieces of data

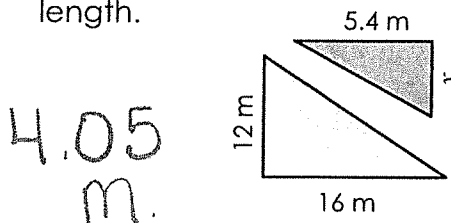
8) A price decreases from \$986 to \$828.24. What is the percent change?

16% decrease

9) A square flower bed needs mulch, which is sold by the square foot. If the flower bed has a side length of 2.5 feet, how much mulch is needed?

6.25 ft.²

10) Determine the missing side length.



11) A dinner bill is \$102, and an 18% tip is left. What is the total spent on dinner?

$$\begin{aligned} 102 \times 1.18 \\ \$120.36 \end{aligned}$$

12) A car rental company charges \$85 plus \$0.22 per mile, m . Write an equation that represents the total cost, c , of renting a car.

$$c = 85 + 0.22m$$

13) Write an equation in slope intercept form for the line represented by the points in the table.

$$y = -\frac{1}{2}x + 6$$

x	y
0	6
2	5
4	4

14) Solve.

$$\begin{aligned} -2+4x &> 5x-6 \\ 4x &> 5x-4 \\ -x &> -4 \\ x &< 4 \end{aligned}$$

15) A house is 32 feet tall. It casts a shadow that is 45 feet long. What is the distance from the top of the house to the end of the shadow?

55.22 ft.



MIXED REVIEW

Directions: Read each problem carefully. Round to the nearest hundredth if needed.

1) Simplify.

$$\frac{1}{5}(5x+2y) - \frac{1}{2}(6x-2y)$$

$$1x + 0.4y - 3x + 1y$$

$$-2x + 1.4y$$

2) Solve.

$$-14x + 2 + 6x = -2$$

$$-8x + 2 = -2$$

$$-8x = -4$$

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

3) Solve $|x + xy|$

if $x = -4, y = 0.5$

$$|-4 + (-4)(0.5)|$$

$$|-4 - 2| = 6$$

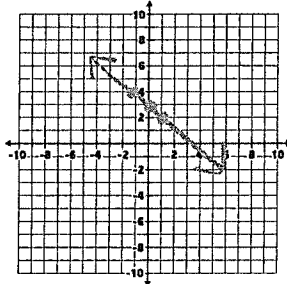
4) After driving for 3.75 hours at an average speed of 62mph, how far have you traveled?

$$d = 3.75 \times 62$$

$$d = 232.5 \text{ mi.}$$

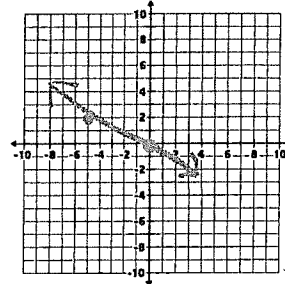
5) Graph the equation,

$$y = -x + 3$$



6) Graph the equation,

$$y = -\frac{2}{5}x$$



7) How do you find the median of a set of data?

write the #'s in order from least to greatest and find the middle #.

8) Kim's weekly pay increases from \$584.60 to \$701.52. What is the percent change?

20% increase

9) Joy is putting new carpet in her office. The room is 8.5feet by 11.7feet. How much carpet will be needed?

$$99.45 \text{ ft.}^2$$

If carpet is \$1.67 per square foot. What will be the cost of the carpet?

10) A scale on a map is 1 inch : 45 miles. If you travel 150 miles, what is the distance on the map?

$$\frac{1}{45} = \frac{x}{150}$$

$$x = 3\frac{1}{3} \text{ in.}$$

11) A \$450 television is discounted 15%. 6% sales tax is added onto the new price. How much is the television after tax?

$$450 \times 0.85 \times 1.06$$

$$\$405.45$$

$$\$166.08$$

12) Write an equation in slope intercept form for the line represented by the points in the table.

$$y = -\frac{1}{3}x - 5$$

x	y
0	-5
3	-6
9	-8

13) Solve.

$$-2 + \frac{1}{2}x > 5x - 14$$

$$-2 > 4.5x - 14$$

$$12 > 4.5x$$

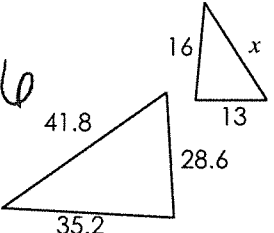
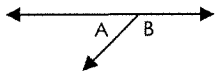
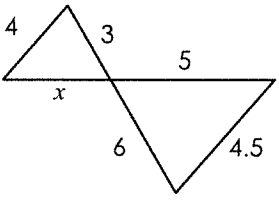
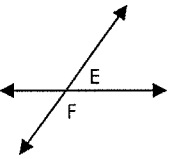
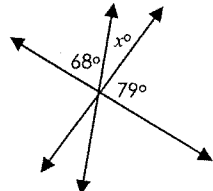
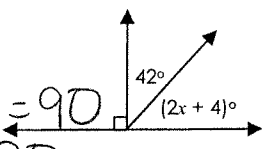
$$x < 2\frac{2}{3}$$

14) A cabin is 13.5 feet tall. It casts a shadow that is 5 feet long. What is the distance from the top of the cabin to the end of the shadow?

$$14.4 \text{ ft.}$$



MIXED REVIEW

1) What is 42% of 120? 50.4	2) The figures are similar. Find the missing dimension. $\frac{x}{41.8} = \frac{13}{28.6}$ $x = 19$ 	3) What is the relationship between $\angle A$ and $\angle B$?  Supplementary angles
4) 65.6 is what percent of 82? 80%	5) Find the value of x. $\frac{x}{5} = \frac{4}{6}$ $x = 3.\overline{3}$ 	6) If $m\angle E$ is 62° what is the $m\angle F$?  $180 - 62$ 118°
7) Enrollment in a summer camp went from 450 to 600. Find the percent change. $\frac{600 - 450}{450}$ 33.3% increase	8) A palm tree stands 42 feet tall and casts a 20 foot shadow. How tall is a person standing next to the tree if they cast a 2.8 foot long shadow? $\frac{42}{20} = \frac{x}{2.8}$ $x = 5.9$ ft.	9) Find the missing angle measure. 33°  $180 - 68 - 79$
10) Rachel spent \$24 at the nail salon and left a 22% tip. How much did she spent altogether? $24 \times 1.22 =$ $\\$29.28$	11) A model car is made using a scale of 2 inches : 3.2 feet. How long is the actual car if the model is 4.2 inches long? $\frac{2}{3.2} = \frac{4.2}{x}$ $x = 6.72$ feet	12) Find the value of x. $2x + 4 + 42 = 90$ $2x + 46 = 90$ $2x = 44$ $x = 22$ 
13) A \$249 video game system is discounted 15%. With 6% sales tax, what would be the final price of the system? $249 \times 0.85 = 211.65$ $211.65 \times 1.06 =$ $\\$224.35$	14) Blueprints for a home are made using a scale of 0.75 inches : 4 feet. If a laundry room is 6 feet wide and 10 feet long in the home, what are the dimensions on the blueprint? 1.125 by 1.875 $\frac{0.75}{4} = \frac{x}{6}$ $\frac{0.75}{4} = \frac{x}{10}$	15) Find the value of x. $x + 4 + x + 60 = 180$ $2x + 64 = 180$ $2x = 116$ $x = 58$ 