

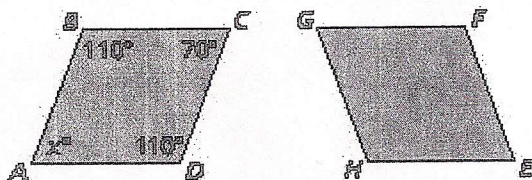
Benchmark Practice #1

Solve.

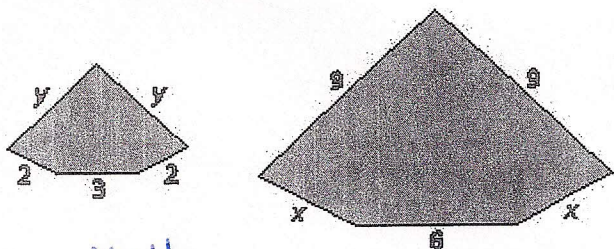
- $x - 7 = -13$   $x = -6$
- $15 - 3c = 3$   $c = 4$
- One cell phone plan charges \$20 per month plus \$0.15 per minute used. A second cell phone plan charges \$35 per month plus \$0.10 per minute used. Write and solve an equation to find the number of minutes you must talk to have the same cost for both calling plans.  $300 \text{ minutes}$

Use the following information.

Parallelograms  $ABCD$  and  $EFGH$  are congruent.



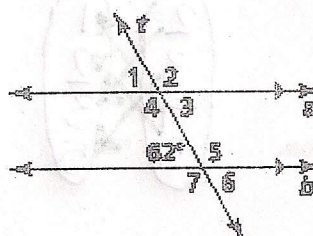
- Which side of  $EFGH$  is congruent to side  $AD$ ?  $HE$
- Find the measure of  $\angle E$ .  $70^\circ$
- A triangle has vertices  $A(-1, 3)$ ,  $B(0, 2)$ , and  $C(-4, 0)$ . Find the coordinates of the triangle after translating it up 2 units and reflecting it in the  $x$ -axis.  $A'(-1, -5)$   $B'(0, -4)$   $C'(-4, -2)$
- The two figures are similar. Find the values of  $x$  and  $y$ , and the ratios (larger to smaller) of the perimeters and areas.



$x = 4$   
 $y = 4.5$   
 Perimeter:  $\frac{2}{1}$   
 Area:  $\frac{4}{1}$

- An original piece of artwork is 3 feet by 2.5 feet. A reprint of the artwork is 6 inches by 5 inches. Are the pieces similar? If so, what is the ratio of their corresponding side lengths?  $\text{yes}; \frac{1}{2}$

- Use the figure to find the measure of  $\angle 1$ .

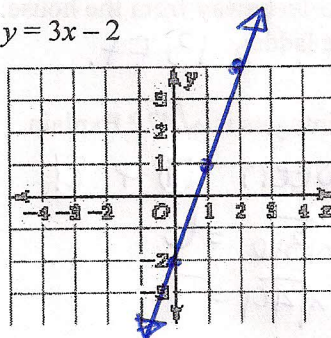


$\angle 1 = 62^\circ$

- Find the measure of each angle of a regular polygon with 8 sides.  $135^\circ$

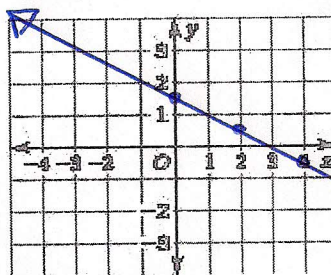
Find the slope and the  $y$ -intercept of the graph of the linear equation. Then sketch its graph.

- $y = 3x - 2$



slope:  $\frac{3}{1}$   
 $b = -2$

- $2x + 4y = 6$



$y = -\frac{1}{2}x + \frac{3}{2}$   
 $m = -\frac{1}{2}$   
 $b = 1\frac{1}{2}$

- The equation  $5x + 2y = 20$  represents the cost for a family to attend a play where  $x$  is the number of adults and  $y$  is the number of children. Find the intercepts and interpret the meaning of each one.

$y$ -int  $\rightarrow 10$  • if no kids buy tickets than 10 kids did  
 $x$ -int  $\rightarrow 4$  • if no adults bought tickets than 4 adults did

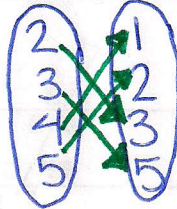
Write an equation of the line in slope-intercept form.

14. the line passing through (0, 1) and (-4, 5)  $y = -x + 1$

15. the line with slope -2.5 and passing through (2, 1.5)  $y = -2.5x + 6.5$

16. Draw a mapping diagram of the set of ordered pairs.

(2, 3), (3, 5), (4, 1), (5, 2)



Evaluate the expression.

17.  $-\sqrt{121} + 15 = 4$

18.  $6 - 5\sqrt{\frac{1}{125}} = 5$

19. A ladder is placed against the side of a house. The top of the ladder is 12 feet above the ground. The base of the ladder is 5 feet away from the house. Find the length of the ladder.  $13 \text{ ft.}$

20. Between which two integers is  $\sqrt{42}$ ? Explain.  
between 6 + 7

$\sqrt{36} = 6$   
 $\sqrt{49} = 7$

