Math 2 **Day 1 Review (Foundations Skills needed for Math 2)** **Name:** _____

1. Solve: $2x + 3 = 11$

2. Solve: $\frac{3}{x} = \frac{4}{5}$

3. Solve: $\frac{3}{x+2} = \frac{15}{20}$

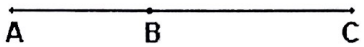
4. **Segment Addition Postulate:**

In the segment below,

$AB = 2x + 9, BC = 4x - 7, AC = 38$

What do x and AB equal?

$x =$ _____ $AB =$ _____



5. **Definition of a Midpoint:**

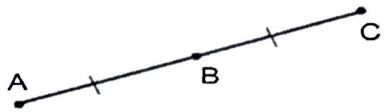
In the segment below,

B is the midpoint of $\overline{AC}$.

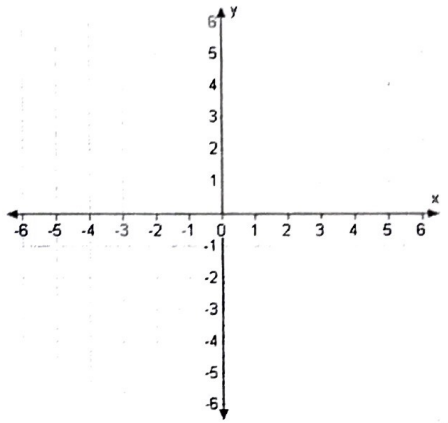
$AB = 4x + 2, BC = 6x - 8$

What do x and AC equal?

$x =$ _____ $AC =$ _____



6. **Graph** the following lines.
   a. $x = 2$ (Hint: Vertical Line)
   b. $y = 4$ (Hint: Horizontal Line)
   c. $y = x$ (Hint: $y = 1x + 0$)
   d. $y = -x$ (Hint: $y = -1x + 0$)



7. **Classify the following angles: (Choose from acute, obtuse, right, or straight)**

8. **Angle Addition Postulate:**

SIDE NOTE: m∠1 is the shortcut way of writing "the measure of angle 1." It's like math texting – you write LOL instead of "laughing out loud," math people write m∠1 instead of "the measure of angle 1."

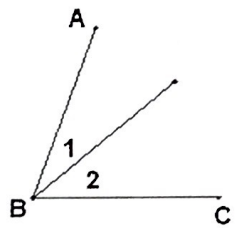
$m\angle 1 = 7x - 2$

$m\angle 2 = 5x + 5$

$m\angle ABC = 75°$

What is x equal to?

$x =$ _____



9. **Angle Bisector:** line or ray that divides an **angle** into two congruent **angles**.

$\overrightarrow{BD}$ bisects $\angle ABC$

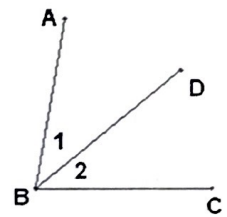
$m\angle 1 = 5x - 12$

$m\angle 2 = 2x + 21$

What are x and $m\angle ABC$?

$x =$ _____

$m\angle ABC =$ _____



For 10-11, suppose $\overline{RS} \cong \overline{MN}$. For each set, solve for x, and find the length of each segment.

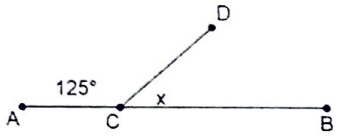
10. $RS = 3x + 17, MN = 7x - 15$

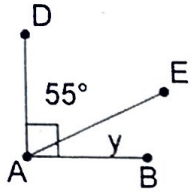
$x =$ _____ $RS =$ ___ $MN =$ ___

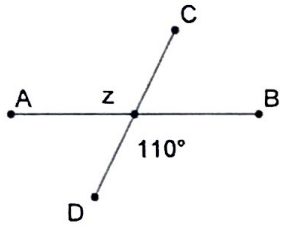
11. $RS = x + 10, MN = 2x + 4$

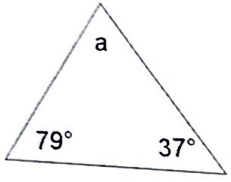
$x =$ _____ $RS =$ ___ $MN =$ ___

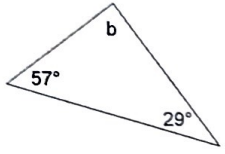
12. Given what you know about triangles, right angles, and straight angles, solve for the variables:

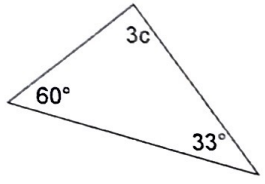












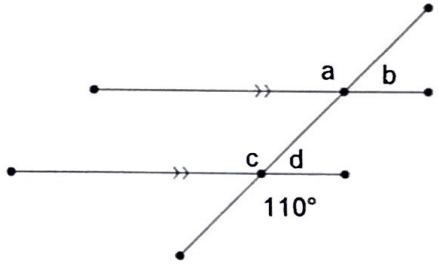
13. The angles around parallel lines have some really interesting properties…can you figure them out?
Find the values of a, b, c, and d.

$a =$ _____

$b =$ _____

$c =$ _____

$d =$ _____



Side Note: The little arrows on the two segments are Geometry notation for saying "these segments are parallel."

14. Multiply each of the following polynomials:

a) $(x+5)(x+4) =$

b) $(2x-3)(x+2) =$

c) $(x+6)^2 =$

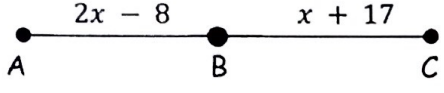
15. Factor each of the following polynomials:

a) $x^2 + 7x + 12 =$ ( )( )

b) $x^2 - 2x - 15 =$ ( )( )

c) $x^2 - 10x + 25 =$ ( )( )

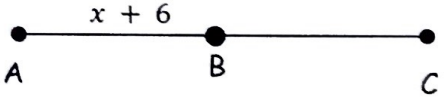
16. Let $\overline{AB} \cong \overline{BC}$.



$x =$ _____ $AB =$ _____

$BC =$ _____ $AC =$ _____

17. Let $\overline{AB} \cong \overline{BC}$, **AC = 3x − 31**



$x =$ _____

$AB =$ _____

$BC =$ _____

$AC =$ _____