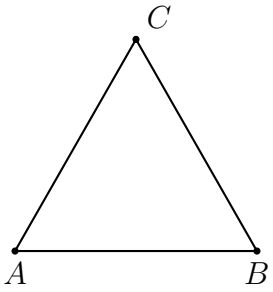
Unit 6: Distance & slope Name:
13 January 2019

7.8 Do Now: Exam followup

1. Given isosceles $\triangle ABC$ with $\overline{AB} \cong \overline{BC}$, $m\angle B = 53$. Mark and label the diagram, and then find $m\angle A$. (*the diagram is not to scale*)



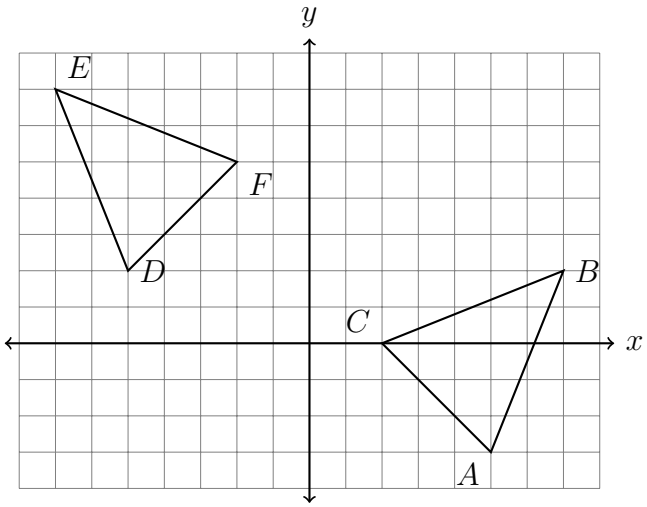
2. A series of transformations maps $\triangle ABC$ onto $\triangle DEF$. Circle True or False.

   (a) T F Only rigid motions were applied.

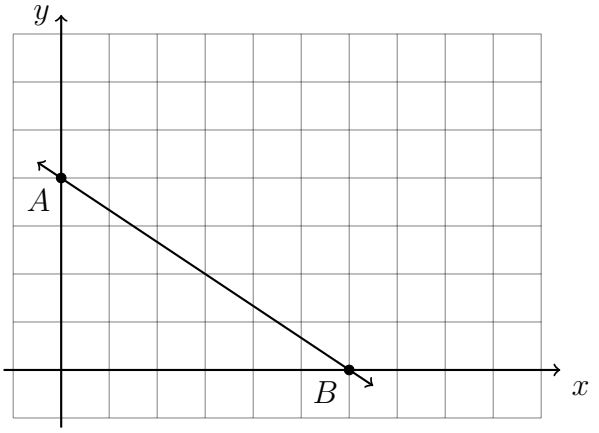
   (b) T F $\overline{BC} \to \overline{EF}$

   (c) T F The orientation of the two triangles are reversed.

   (d) T F $\overline{AB} \cong \overline{EF}$



3. The line $\overleftrightarrow{AB}$ has the equation $y = -\frac{2}{3}x + 4$. Apply a dilation mapping $\overleftrightarrow{AB} \to \overleftrightarrow{A'B'}$ with a factor of $k = 1.5$ centered at the origin. Draw and label the image on the grid. Write the equation of the line $\overleftrightarrow{A'B'}$.



The slopes of two lines are given with statements about whether they are parallel or perpendicular. Circle True or False for each statement. Then chose one correct statement and copy it in the space provided.

4. $m_1 = 2$ $\qquad\qquad$ $m_2 = \frac{1}{2}$

(a) True False Parallel. The slopes are equal.

(b) True False Perpendicular. The slopes are negative reciprocals.

(c) True False Neither. The slopes are not equal and they are not negative reciprocals.

(d) True False Parallel. $2 = \frac{1}{2}$

(e) True False Perpendicular. $2 \times \frac{1}{2} = -1$

(f) True False Neither. $2 \neq \frac{1}{2}$ and $2 \times \frac{1}{2} \neq -1$

Copy one correct statement here:

5. $m_1 = \frac{2}{3}$ $\qquad\qquad$ $m_2 = -\frac{3}{2}$

(a) True False Parallel. The slopes are equal.

(b) True False Perpendicular. The slopes are negative reciprocals.

(c) True False Neither. The slopes are not equal and they are not negative reciprocals.

(d) True False Parallel. $\frac{2}{3} = -\frac{3}{2}$

(e) True False Perpendicular. $\frac{2}{3} \times -\frac{3}{2} = -1$

(f) True False Neither. $\frac{2}{3} \neq -\frac{3}{2}$ and $\frac{2}{3} \times -\frac{3}{2} \neq -1$

Copy one correct statement here:

6. Shown below is line l_1 through the points $A(0, 6)$ and $B(0, 3)$.

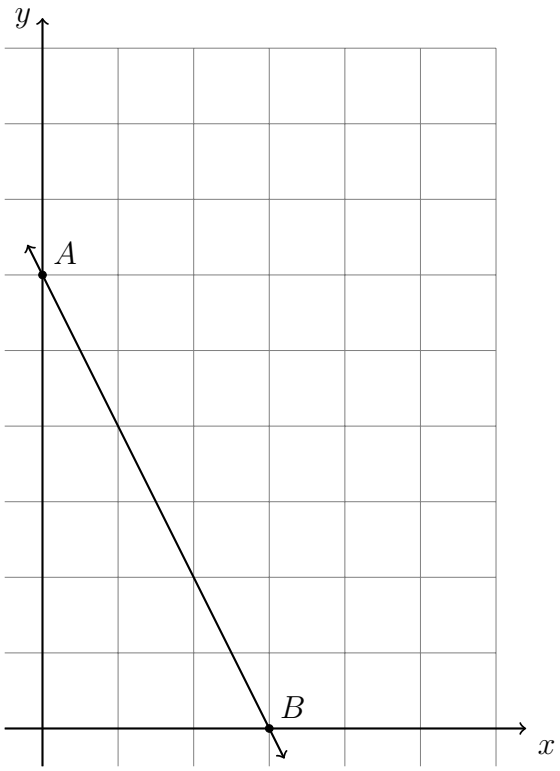
   (a) Find the slope of the line l_1.

   (b) Write down the equation of the line.

   (c) A second line l_2 is perpendicular to l_1 and passes through $C(2, 2)$.

   Mark and label point C and draw the line l_2.

   (d) Write down the equation of the line l_2.



7. A triangle is dilated with factor k such that $\triangle ABC \sim \triangle DEF$. Circle True or False.

   (a) T F $\angle A \cong \angle E$

   (b) T F $\overline{AC} \to \overline{DF}$

   (c) T F $k = \dfrac{DF}{AC}$

   (d) T F $\overline{AC} \cong \overline{DF}$

   (e) T F $\dfrac{DE}{AB} = \dfrac{EF}{BC}$

   (f) T F $DE \times BC = AB \times EF$

Spicy: Using the distance formula to prove an isosceles triangle

8. In this problem use the following theorem (copy it at the bottom of the page after your calculations):

   A triangle is isosceles if and only two of its sides are congruent.

   Shown below is triangle ABC, $A(-2, 2)$, $B(4, 5)$, and $C(1, -1)$.

   Prove it is an isosceles triangle by

   (a) finding the length of each of the three sides,

   (b) stating which sides are congruent,

   (c) copying the theorem as your conclusion, adding *therefore* $\triangle ABC$ *is isosceles.*