

3 January 2020

7.2 Do Now: Linear graphs, isosceles triangles, dilations

1. (a) Graph and label the two equations. Mark their intersection as an ordered pair.

$$y = -\frac{3}{2}x - 7$$

$$2x - 3y = -18$$

(4 pts)

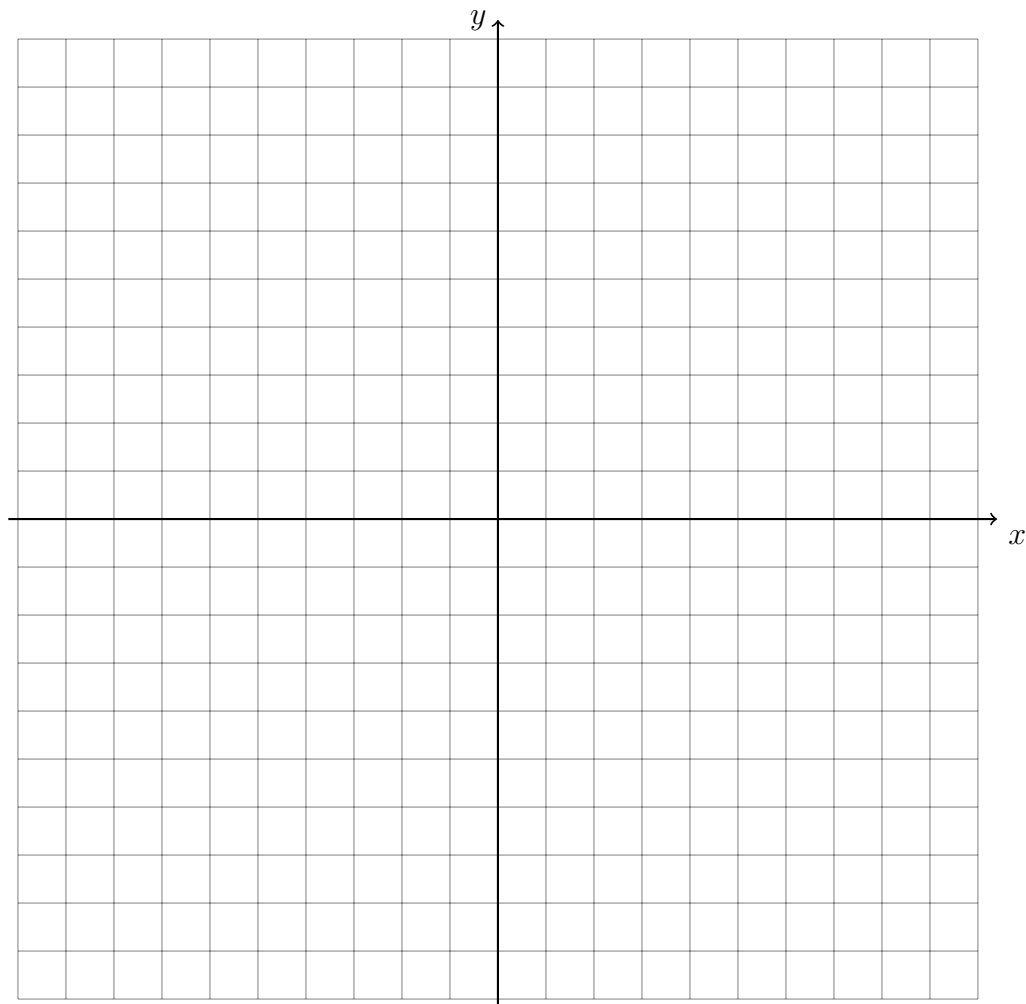
- (b) Find the slopes of the two lines.

(2 points)

$$m_1 =$$

$$m_2 =$$

- (c) Are the lines parallel, perpendicular, or neither? Justify your answer with an equation or inequality using the slopes. (2 points)



2. A dilation centered at A maps $\triangle ABC \rightarrow \triangle ADE$. Given the sides of the preimage, $AC = 6$, $BC = 4$, $AB = 8$, and of $DE = 14$ find the scale factor k and the lengths AD and AE . Then find CE and BD .

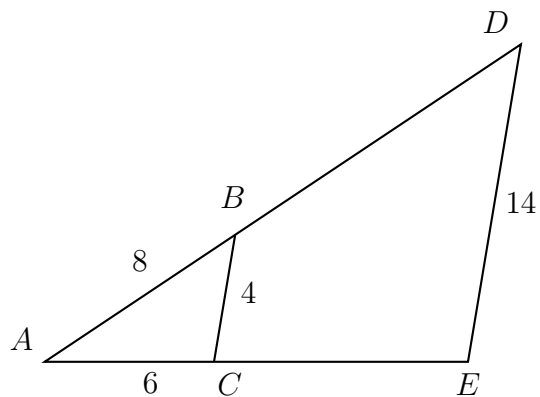
(a) $k =$

(b) $AD =$

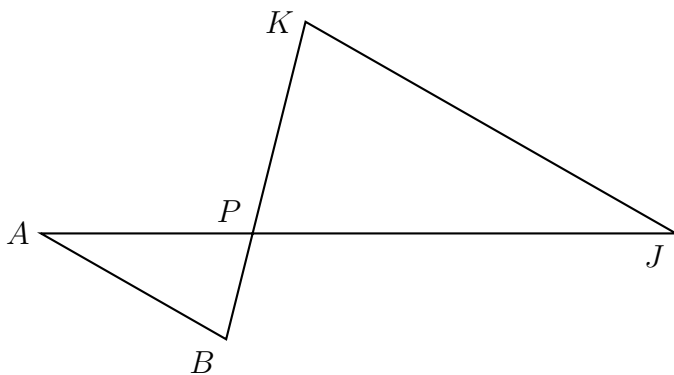
(c) $AE =$

(d) $CE =$

(e) $BD =$



3. Given $\triangle ABP \sim \triangle JKP$ as shown below. $AB = 5.7$, $AP = 7.4$, $BP = 3.6$, and $KP = 9.0$. Find JK .

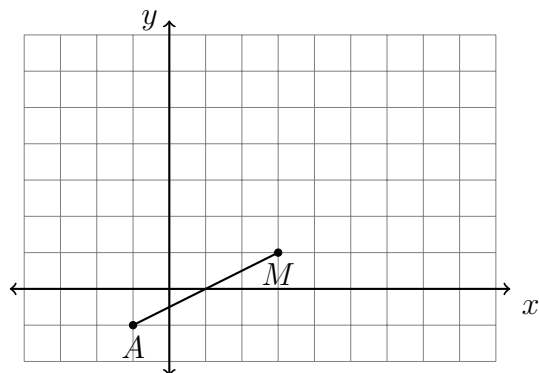


4. $A(-1, -1)$ is one endpoint of \overline{AB} . The segment's midpoint is $M(3, 1)$, as shown below.

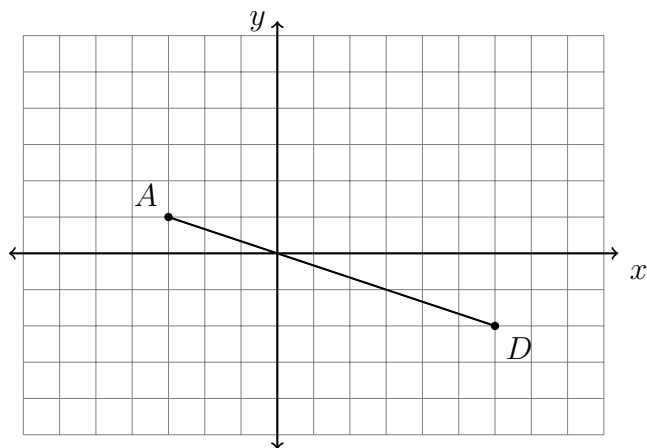
(a) What translation maps

$$A(-1, -1) \rightarrow M(3, 1)?$$

(b) Find the other endpoint, B .



5. In the diagram below, \overline{AD} has endpoints with coordinates $A(-3, 1)$ and $D(6, -2)$. What points B and C trisect \overline{AD} into three congruent segments? Mark and label them on the graph. State their coordinates.



6. Given $\triangle ABC$ is isosceles but not equilateral with $\angle A \cong \angle C$. (not draw to scale)

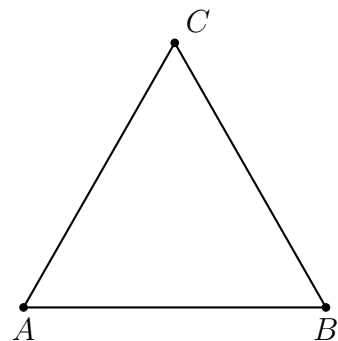
(a) Mark the congruent sides & angles of $\triangle ABC$.

Circle True or False:

(b) True False $\overline{AB} \cong \overline{BC}$

(c) True False $\overline{AB} \cong \overline{AC}$

(d) True False $\overline{BC} \cong \overline{AC}$



7. Given isosceles $\triangle ABC$ with $\overline{AB} \cong \overline{AC}$.

(the diagram is not to scale)

- (a) Mark the congruent sides & angles of $\triangle ABC$.

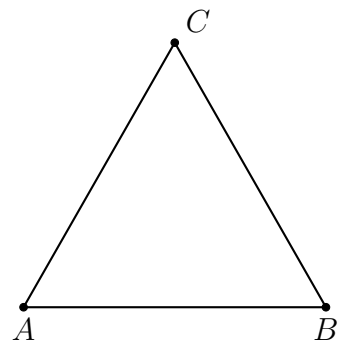
Circle True or False:

- (b) True False $\angle A \cong \angle B$

- (c) True False $\angle A \cong \angle C$

- (d) True False $\angle B \cong \angle C$

- (e) T F $m\angle A + m\angle B + m\angle C = 180$



8. Given isosceles $\triangle RSU$ with $\overline{RS} \cong \overline{SU}$.

(the diagram is not to scale)

- (a) Mark the congruent sides & angles of $\triangle RSU$.

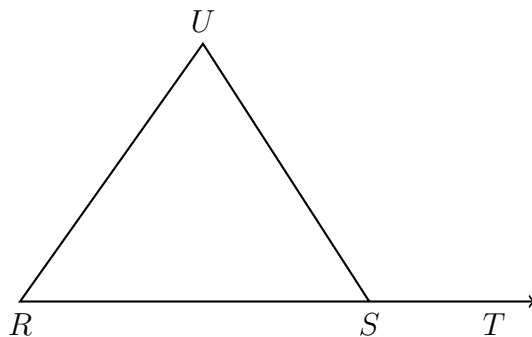
Circle True or False:

- (b) True False $\angle R \cong \angle RSU$

- (c) True False $\angle R \cong \angle U$

- (d) True False $\angle RSU \cong \angle U$

- (e) True False $\angle R \cong \angle TSU$



- (f) True False $\angle RSU \cong \angle TSU$

- (g) True False $m\angle RSU + m\angle TSU = 180$

- (h) True False $m\angle R + m\angle RSU + m\angle U = 180$

Name:

7.2 Spicy: Similar triangles, dilations

9. The diagram below shows $\triangle ABC \sim \triangle ADE$, with \overline{AEB} , \overline{ADC} , and $\angle ACB \cong \angle AED$.
 $AB = 8$, $AD = 4$, and $DE = 2$.

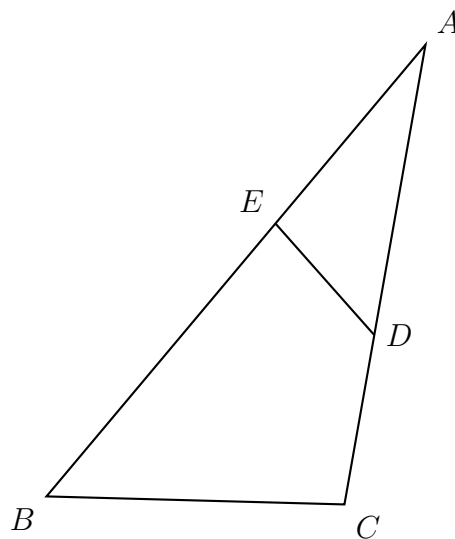
(a) $\triangle ADE \rightarrow$ _____

(b) $\overline{AD} \rightarrow$ _____

(c) What is the scale factor?

$k =$ _____

(d) What is the length of \overline{BC} ?



10. Given $\triangle ABC \sim \triangle ADE$ with sides $AC = 9$, $BC = 6$, $AB = 12$, and of $DE = 10$ find the scale factor k and the lengths AD and AE . Then find CD .

(a) $k =$

(b) $AD =$

(c) $AE =$

(d) $CD =$

