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**7-2bDN-Graphing-practice**

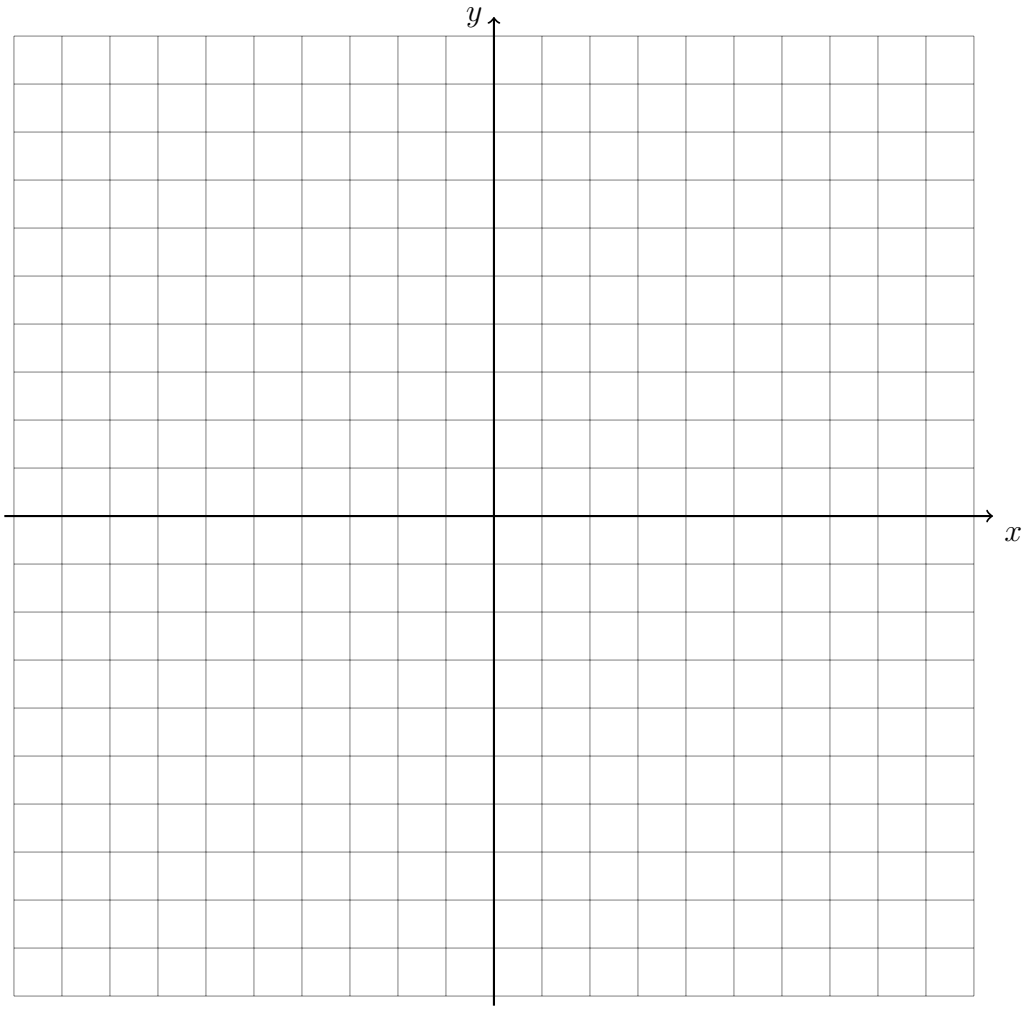
1. (a) Graph and label the two equations. Mark their intersection as an ordered pair.

   $y = -\frac{3}{2}x - 7$ $2x - 3y = -18$ (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 $\triangle ABC \to \triangle ADE$. 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 $BD$.

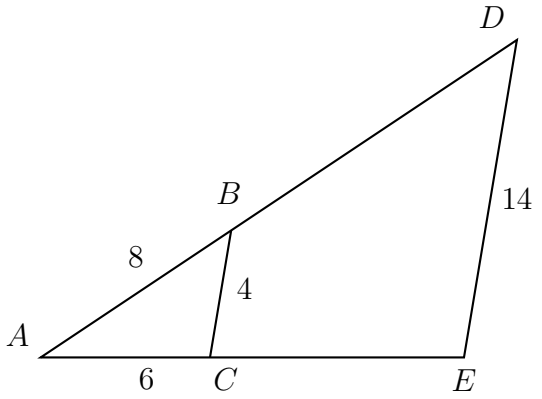
(a) $k =$

(b) $AD =$

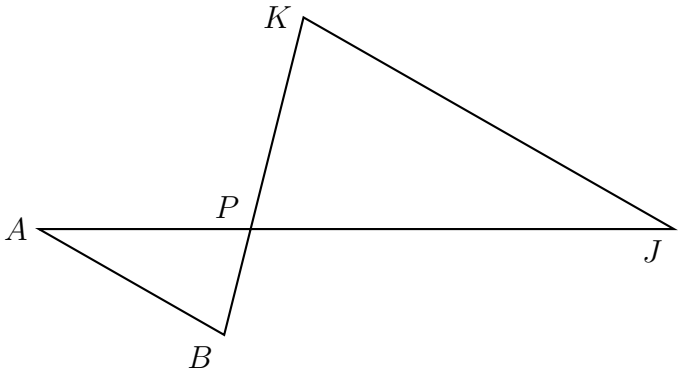
(c) $AE =$

(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 $JK$.



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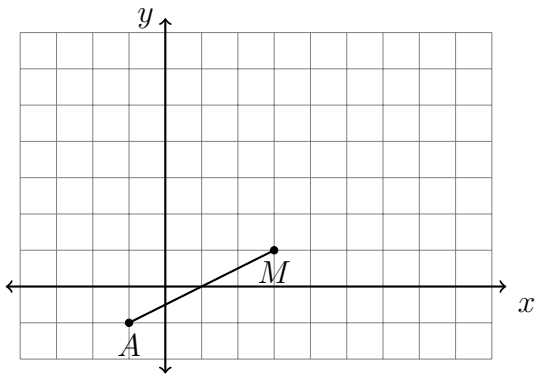
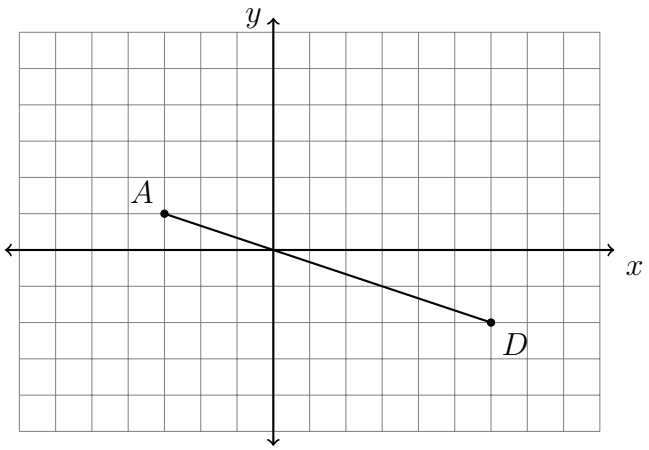
4. $A(-1,-1)$ is one endpoint of $\overline{AB}$. The segment's midpoint is $M(3,1)$, as shown below.

   (a) What translation maps $A(-1,-1) \to M(3,1)$?

   (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*)

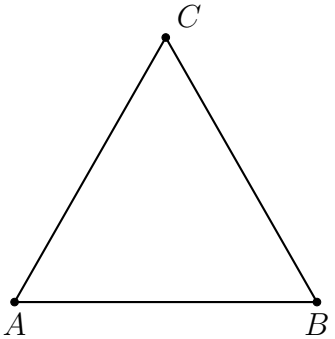
   (a) Mark the congruent sides & angles of $\triangle ABC$.

   Circle True or False:

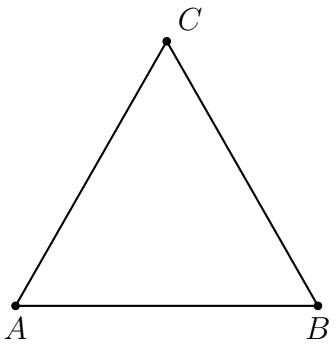
   (b) True False $\overline{AB} \cong \overline{BC}$

   (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 $\angle A \cong \angle C$

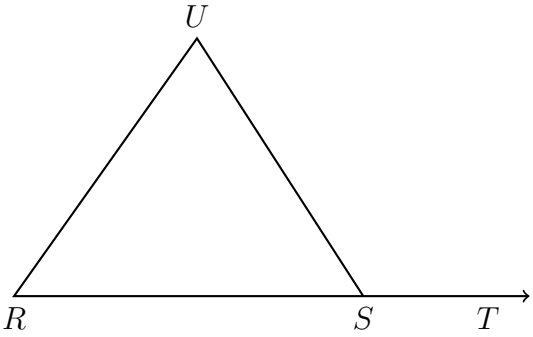
   (d) True False $\angle B \cong \angle C$

   (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 $m\angle R + m\angle RSU + m\angle U = 180$

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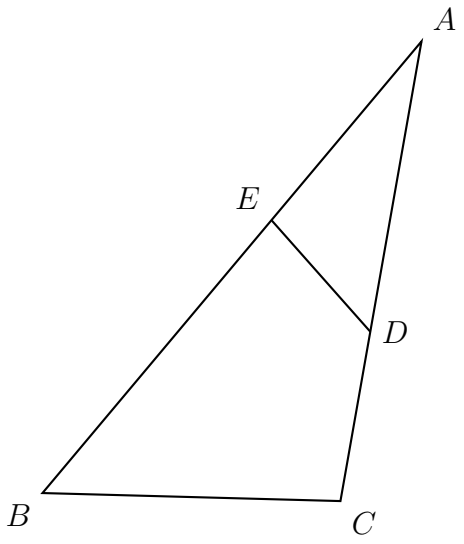
**7.2 Spicy: Similar triangles, dilations**

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) $\triangle ADE \to$ _____

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

(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) $CD =$