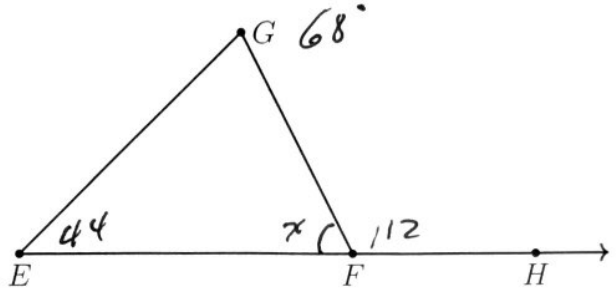
BECA / Dr. Huson / Geometry
Unit 9: Dilation
22 March 2023

Name: Solutions

**9.6 Classwork: Mixed review** **CCSS.HSG.SRT.B.5**

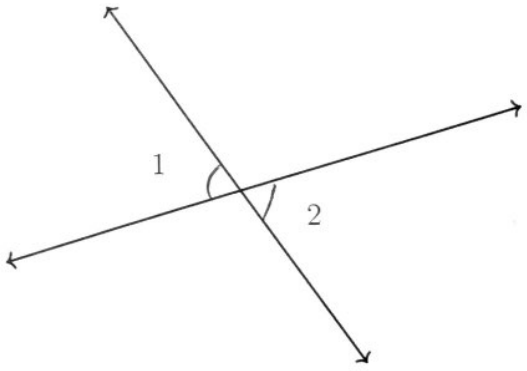
1. Given $m\angle E = 44$, and $m\angle GFH = 112$. Find $m\angle G$.




$x + 112 = 180$
$x = 68$

$44 + 68 + m\angle G = 180$
$m\angle G = 68$

2. Given two vertical angles, $m\angle 1 = 4x + 5$, $m\angle 2 = \dfrac{9x - 7}{2}$. Find $m\angle 1$.
For full credit, check by comparing to $m\angle 2$.




$4x + 5 = \dfrac{9x - 7}{2}$

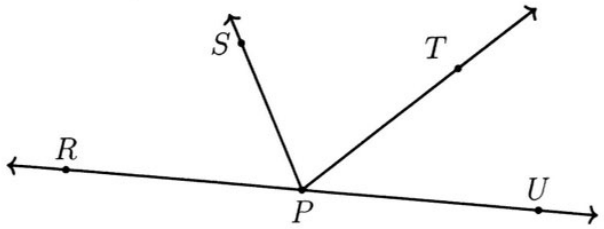
$8x + 10 = 9x - 7$

$x = 17$

$m\angle 1 = 4(17) + 5 = 73°$

$m\angle 2 = \dfrac{9(17) - 7}{2} = 73$ ✓

3. Given the situation in the diagram, answer each question. Circle True or False.



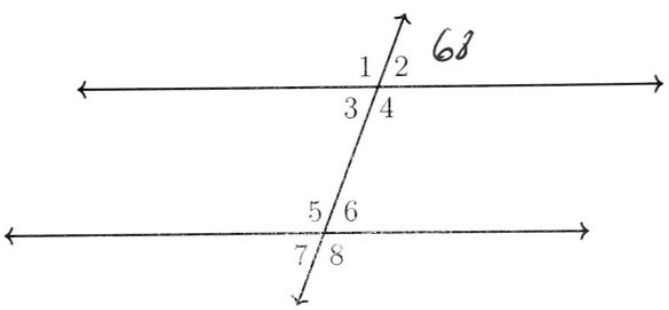

(a) True or False: $\angle SPU$ is an obtuse angle.

(b) True or False: $\overrightarrow{SP}$ and $\overrightarrow{PS}$ are opposite rays.

(c) True or False: $\angle RPT$ and $\angle TPU$ are a linear pair.

(d) True or False: $\angle SPT$ and $\angle RPS$ are adjacent.

4. Given two parallel lines and a transversal, as shown. Apply the theorem, "If a transversal intersects two parallel lines, then corresponding angles are congruent."




(a) State the angle corresponding with $\angle 7$. $\angle 3$

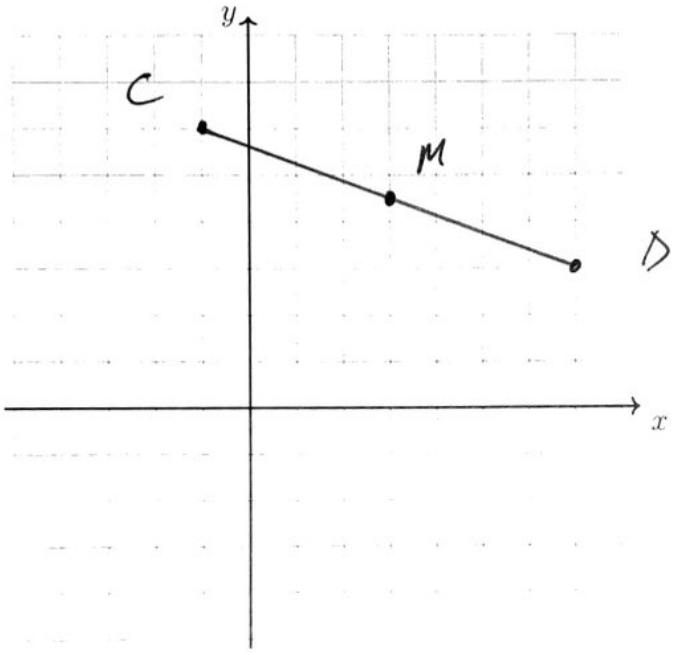
(b) Given $m\angle 2 = 68°$. Find $m\angle 3$. 68

(c) In a proof, what reason would justify $\angle 4 \cong \angle 5$? Alternate Interior $\angle$s are $\cong$

(d) Given $m\angle 5 = 112°$ and $m\angle 3 = 4x°$. Find $x$.

$$112 + 4x = 180$$
$$4x = 68$$
$$x = 17$$

5. On the graph below, draw $\overline{CD}$, with $C(-1,6)$ and $D(7,3)$, labeling the end points. Determine and state the coordinates of the midpoint $M$ of $\overline{CD}$ and mark and label it on the graph.



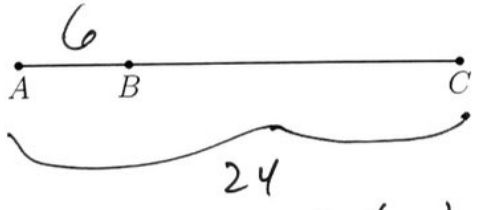

$M = \left(\frac{-1+7}{2}, \frac{6+3}{2}\right)$

$= \left(3, 4\frac{1}{2}\right)$

6. Given $\overline{ABC}$, $AC = 24$, and the point $B$ partitions $\overline{AC}$ in a ratio of 1:3.

Find $AB$.

$\frac{1}{4} : \frac{3}{4}$

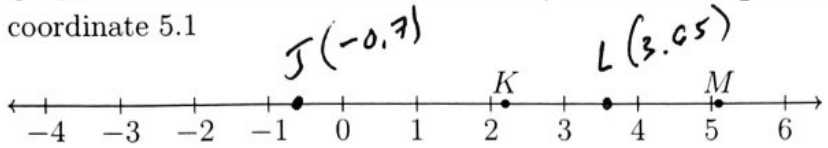



$\left(\frac{1}{4}\right)24 \qquad \frac{3}{4}(24)$

$6 : 18$

$AB = 6$

7. Given $\overleftrightarrow{KM}$ as shown on the number line, with $K$ having the coordinate 2.2 and $M$ the coordinate 5.1



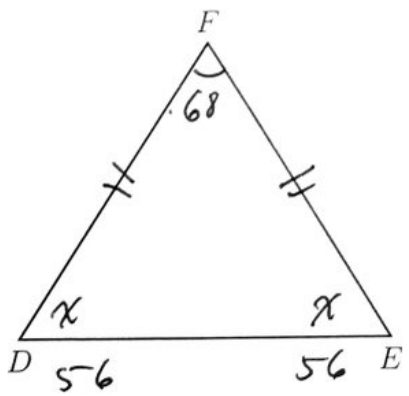

(a) Find the value of the coordinate of the point $L$, the midpoint of $\overline{KM}$.

$$L = \frac{2.2+5.1}{2} = \frac{7.3}{2} = 3.65$$

(b) The point $J$ is collinear with $\overleftrightarrow{KM}$ such that $K$ is the midpoint of $\overleftrightarrow{JM}$. Mark $J$ on the line and state the value of its coordinate.

$$m-k = 5.1-2.2 = 2.9$$
$$J = k-2.9 = 2.2-2.9 = -0.7$$

8. Given $\triangle DEF$. $\overline{DF} \cong \overline{EF}$. $m\angle F = 68$. Find $m\angle D$.




$$68+2x = 180$$
$$2x = 112$$
$$x = 56$$

$56+56+68 = 180$ ✓