Name KEY Date Period Geometry w. Trig.

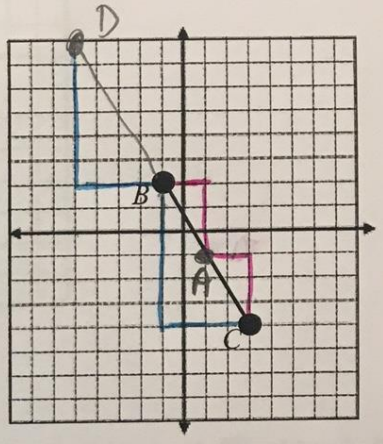
Unit 1 Quiz #2 Optional Review

1. What is the Distance Formula? $d=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$

2. What is the Pythagorean Theorem? $a^2+b^2=c^2$

3. What is the Midpoint Formula? $M\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

For #4-6 use the graph to the right.



4. What is the distance between points B and C? Leave in simplest radical form.

$B(-1,2)$ $C(3,-4)$ $d=\sqrt{(3-(-1))^2+(-4-2)^2}$

$x_1\ y_1$ $x_2\ y_2$

$\sqrt{(4)^2+(-6)^2}$

$\sqrt{16+36}=\sqrt{52}=\boxed{2\sqrt{13}}$

5. Suppose A is the midpoint of $\overline{BC}$. Find the coordinates of A.

$M\left(\frac{-1+3}{2}, \frac{2+-4}{2}\right)$ $M(1,-1)$

$M\left(\frac{2}{2}, \frac{-2}{2}\right)$

6. Suppose point B is the midpoint of $\overline{DC}$. Find the coordinates of D. $B(-1,2)$

$C(3,-4)$ $\frac{3+x_2}{2}=-1$ $\frac{-4+y_2}{2}=2$

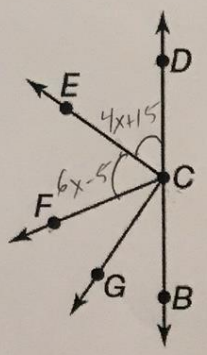
$x_1\ y_1$

$D(x_2,y_2)$ $3+x_2=-2$ $-4+y_2=4$ $D(-5,8)$

$x_2=-5$ $y_2=8$

Use the figure to the right to answer #7.

7. Suppose $\overrightarrow{CE}$ bisects $\angle DCF$, $m\angle DCE=(4x+15)°$, and $m\angle ECF=(6x-5)°$. Find $m\angle DCF$.



$4x+15=6x-5$

$20=2x$

$\boxed{x=10}$

plug in $x=10$

$m\angle DCF=4x+15+6x-5$

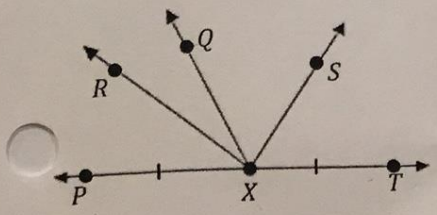
$=10x+10$

$=10(10)+10$

$=100+10=110$

$\boxed{m\angle DCF=110°}$

Use the diagram below to answer #8.

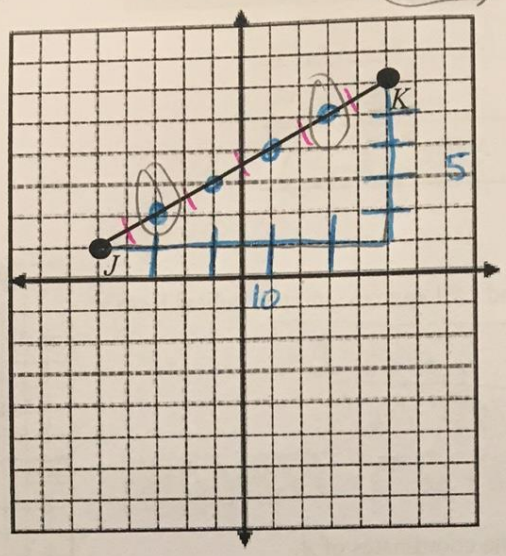


8. Which of the following are true statements? Check all that apply.

- ☑ $\overrightarrow{XS}$ bisects $\overline{PT}$
- ☐ $\overrightarrow{XS}$ bisects $\angle QXT$ ← Congruent angles are not marked
- ☐ $PX \cong XT$ ← incorrect notation
- ☑ X is the midpoint of $\overline{PT}$
- ☐ $PX = XT$
- ☑ $m\angle QXS + m\angle SXT = m\angle QXT$

9. Consider $\overline{JK}$ shown on the coordinate plane. Suppose A lies on $\overline{JK}$. Find a possible set of coordinates for A so that it divides $\overline{JK}$ into two segments whose lengths are in a 1:4 ratio.

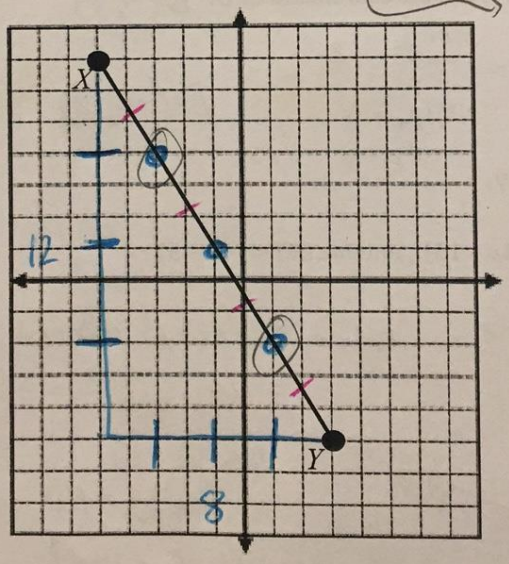
→ 5 parts



(-3, 2), (3, 5)

10. Consider $\overline{XY}$ shown on the coordinate plane. Suppose A lies on $\overline{XY}$. Find a possible set of coordinates for A so that it divides $\overline{XY}$ into two segments whose lengths are in a 3:1 ratio.

→ 4 parts



(1, -2) (-3, 4)