Name **Key**   Date _____ Pd ____
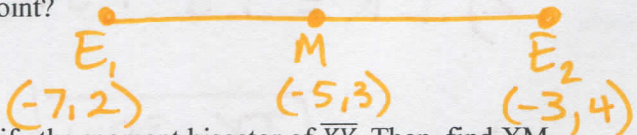
1.1-1.4 Quiz Review Honors Geometry

Show all work for full credit. Be sure to use correct notation, and put your final answer in the box or blank provided.
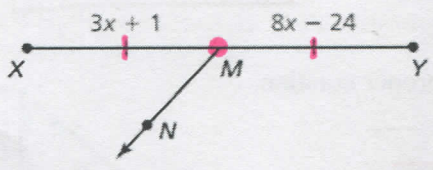
1. Points on the same line are called **colinear** .

2. The midpoint formula is $M_{(x,y)} = \left(\dfrac{x_1+x_2}{2}, \dfrac{y_1+y_2}{2}\right)$.

3. Given the midpoint is (-5, 3) and one endpoint is (-7, 2), what is the coordinate for the second endpoint?

$x = -5+2 = -3$
$y = 3+1 = 4$

E_1 (-7, 2) M (-5, 3) E_2 (-3, 4)

$\boxed{E_2\,(-3,4)}$

4. Identify the segment bisector of $\overline{XY}$. Then, find XM.

$3x+1$ $8x-24$
X ———|———— M ———|———— Y
         ↘ N

$3x+1 = 8x-24$
$1 = 5x-24$
$25 = 5x$
$\boxed{5 = x} \Rightarrow$

$\overrightarrow{MN}$
$\boxed{XM = 16u}$

$3(5)+1 = 15+1$
$= 16$

5. What is the definition of a polygon? Then state the name for a 10-sided, 5-sided, & 7-sided polygon. **closed figure w/ 3 or more segments as sides. 10: decagon; 5: pentagon; 7: heptagon**

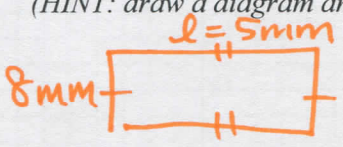6. Find the perimeter and area of the figure provided. (Be sure to use proper units.)

$C = \sqrt{4^2+6^2}$
$= \sqrt{16+36}$
$= \sqrt{52}$

Perimeter: $10 + \sqrt{52}$ u

Area: $\frac{1}{2}(4)(6) = \frac{1}{2}(24) = 12u^2$

4
c
6

7. Find the area and perimeter for a rectangle with length of 5mm and width of 8mm. (HINT: draw a diagram and label it)

$\ell = 5mm$
8mm

Perimeter: $2(5) + 2(8) = 10+16$
$\boxed{26mm}$

Area: $5(8) = \boxed{40\,mm^2}$

8. Describe how to determine if a polygon is concave or convex. **extend the sides. Convex: no sides extend through the polygon. Concave: at least one will go inside.**

9. Find the exact distance between A(14, 2) and B(6, -3). Show the set up.

$x_1\,y_1 \quad x_2\,y_2$

don't round!

$d = \sqrt{(14-6)^2 + (2 - -3)^2}$
$= \sqrt{8^2 + 5^2}$
$= \sqrt{64+25} = \sqrt{89}$

$\boxed{\sqrt{89}\ u}$

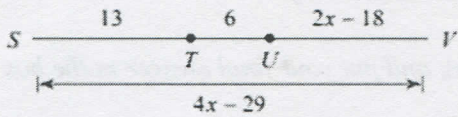Seg. Add. Post: $ST + TU + UV = SV$

$13 + 6 + 2x - 18 = 4x - 29$

$1 + 2x = 4x - 29$

$30 = 2x$

$\boxed{15 = x}$
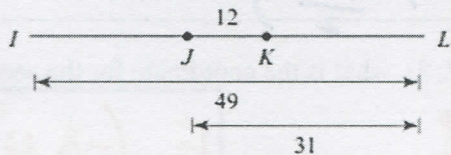
$\boxed{x = 15, \quad UV = 12u; \quad SV = 31u}$

10. Solve for x, UV, & SV. Show work.

$UV = 2(15) - 18 = 12$ $SV = 4(15) - 29 = 31$

11. Describe the process you would use, in words, to solve for IK.

1) $IL - JL = IJ$

2) $IK = IJ + JK$

1) $49 - 31 = 18$

2) $IK = 18 + 12 = 30$

$\boxed{IK = 30u}$

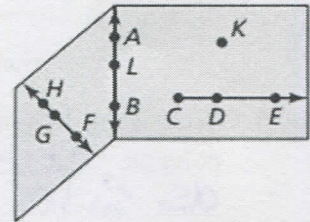For 12-16 Use this diagram. Answers may vary. Use proper notation.

12. Name a ray $\vec{LA}$, $\vec{CE}$, $\vec{GF}$

13. Name two lines $\overleftrightarrow{AB}$ $\overleftrightarrow{HF}$

14. Name two line segments $\overline{AB}$ $\overline{CD}$ $\overline{HF}$

15. Name three collinear points ALB, HGF

16. Name two non-coplanar points $K \, \& \, G$

17. Graph the following points on the coordinate plane provided. Show all work!

A (1,1) B (1,6) C(8,1)

a.) Find the exact length of each side.

$AB: \sqrt{(1-1)^2 + (1-6)^2} = \sqrt{0 + 25} = 5$

$BC: \sqrt{(1-8)^2 + (6-1)^2} = \sqrt{49 + 25} = \sqrt{74}$

$AC: \sqrt{(1-8)^2 + (1-1)^2} = \sqrt{49 + 0} = 7$

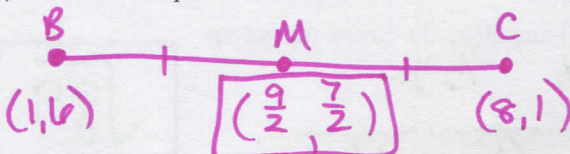b.) What is the exact perimeter of the triangle?

$P = 5 + 7 + \sqrt{74}$

$= \boxed{12 + \sqrt{74} \; u}$

c.) What is the area of the triangle?

$A = \frac{1}{2}(5)(7) = \frac{1}{2}(35)$

$\boxed{\approx 17.5 \; u^2}$

d.) Find the midpoint of $\overline{BC}$.

$\left(\frac{1+8}{2}, \frac{6+1}{2}\right)$

$\left(\frac{9}{2}, \frac{7}{2}\right)$