Name: _____

1.6 – Constructing Perpendicular Lines, Parallel Lines, & Polygons

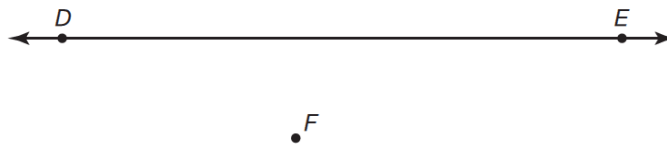Past due on: _____ Period:_____

1. Construct a line that is perpendicular to $\overleftrightarrow{AB}$ and passes through point X.

2. Construct a line that is perpendicular to $\overleftrightarrow{YZ}$ and passes through point G.

3. Construct a line that is parallel to $\overleftrightarrow{DE}$ and passes through point F.

4. Construct an equilateral triangle. The length of one side is given.

5. Construct an isosceles triangle that is not an equilateral triangle such that each leg is longer than the base. The length of the base is given.
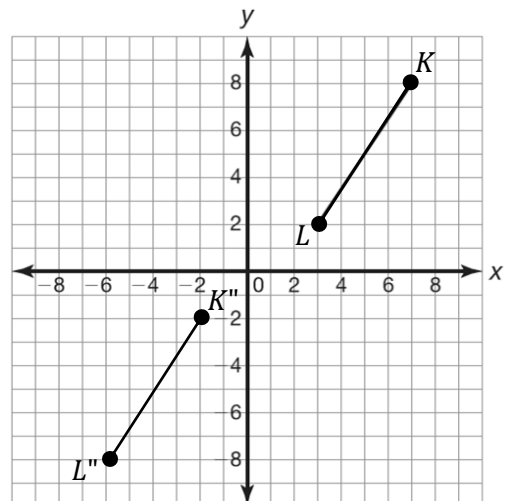
Chapter Review

6. Given $(6, -3)$ & $(-4, 5)$

   a. Find the distance between the given pair of points. Round your answer to the nearest tenth, if necessary.

   b. Determine the midpoint of the line segment with the given pair of points.

7. Line segment KL was translated twice. The final image is $K''L''$. Draw image $K'L'$. Explain your reasoning.

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8. $\overline{LM}$ is 3.5 centimeters long. Gary bisects the line segment and labels the point of intersection P. What is the length of $\overline{LP}$?

9. Lori bisects $\angle GHI$; $m\angle GHI = 120°$. She labels a point on the bisector as J. What is the measure of $\angle GHJ$?

10. Write an equation in slope-intercept form for the line that is parallel to $3x - 5y = -20$ and that passes through $(3, 5)$.

11. Write an equation in slope-intercept form for the line that is perpendicular to $y = -4x + 2$ and that passes through $(1, -4)$.

Consider an angle on the coordinate plane with the given endpoints. After the translation described, what are the coordinates of the image's endpoints?

12. 1 unit right & 3 units down
$W(-3, 0), J(-4, 5), V(-1, 4)$

13. 4 units left and 2 units up
$S(-1, -3), T(0, 2), X(3, 0)$

14. 7 units right and 4 units up
$B(-5, -2), P(-2, 1), W(-3, -4)$

15. 5 units left and 6 units down
$F(1, 0), E(4, 3), N(4, -2)$

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16. Calculate the distance between the line $y = -\frac{3}{4}x + 3$ and the point $(3, 7)$. *Follow the steps below.*

    a. Find the equation of the perpendicular segment.

    b. Find the point of intersection.

    c. Find the distance between the point of intersection and the given point.