Lesson 6 Problem Set

Name__________________________ Date___________________

1. Plot the following points, and label them on the coordinate plane.

   \[ A: (0.3, 0.1) \quad B: (0.3, 0.7) \]
   \[ C: (0.2, 0.9) \quad D: (0.4, 0.9) \]

   a. Use a straightedge to construct line segments \( \overline{AB} \) and \( \overline{CD} \).

   b. Line segment _________ is parallel to the \( x \)-axis and is perpendicular to the \( y \)-axis.

   c. Line segment _________ is parallel to the \( y \)-axis and is perpendicular to the \( x \)-axis.

   d. Plot a point on line segment \( \overline{AB} \) that is not at the endpoints, and name it \( U \). Write the coordinates. \( U (______, ______) \)

   e. Plot a point on line segment \( \overline{CD} \), and name it \( V \). Write the coordinates. \( V (______, ______) \)
2. Construct line $f$ such that the $y$-coordinate of every point is $3\frac{1}{2}$, and construct line $g$ such that the $x$-coordinate of every point is $4\frac{1}{2}$.

a. Line $f$ is ________ units from the $x$-axis.

b. Give the coordinates of the point on line $f$ that is $\frac{1}{2}$ unit from the $y$-axis. ________

c. With a blue pencil, shade the portion of the grid that is less than $3\frac{1}{2}$ units from the $x$-axis.

d. Line $g$ is ________ units from the $y$-axis.

e. Give the coordinates of the point on line $g$ that is 5 units from the $x$-axis. ________

f. With a red pencil, shade the portion of the grid that is more than $4\frac{1}{2}$ units from the $y$-axis.
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3. Complete the following tasks on the plane below.
   a. Construct a line $m$ that is perpendicular to the $x$-axis and 3.2 units from the $y$-axis.
   b. Construct a line $a$ that is 0.8 unit from the $x$-axis.
   c. Construct a line $t$ that is parallel to line $m$ and halfway between line $m$ and the $y$-axis.
   d. Construct a line $h$ that is perpendicular to line $t$ and passes through the point (1.2, 2.4).
   e. Using a blue pencil, shade the region that contains points that are more than 1.6 units and less than 3.2 units from the $y$-axis.
   f. Using a red pencil, shade the region that contains points that are more than 0.8 unit and less than 2.4 units from the $x$-axis.
   g. Give the coordinates of a point that lies in the double-shaded region.