$\qquad$ Key

Date: $\qquad$ Period: $\qquad$

1. Find the slope of the line passing through the pairs of points and describe the line as rising, falling, horizontal or vertical.
a. $(2,1),(4,5)$
b. $(-1,0),(3,-5)$
$\frac{5-1}{4-2}=\frac{4}{2}=2 ;$ rising

$$
\frac{-5-0}{3-(-1)}=-\frac{5}{4} ; \text { falling }
$$

c. $(2,1),(-3,1)$
$\frac{1-1}{-3-3}=\frac{0}{-5}=0 ;$ horizontal
2. Determine whether the graphs of each pair of equations are parallel, perpendicular or neither.
a. $y=3 x+4 ; y=3 x+7$
b. $y=-4 x+1 ; \quad 4 y=x+3$
parallel perpendicular
c. $y=2 x-5 ; \quad y=5 x-5$
d. $y=-1 / 3 x+2 ; \quad y=3 x-5$
3. Write the equation in slope-intercept form of the line that is parallel to the graph of each equation and passes through the given point.
a. $y=3 x+6 ; \quad(4,7)$
b. $y=x-4$;

$$
\begin{array}{ll}
y=3 x+b & y=1 x+b  \tag{-2,3}\\
7=3(4)+b & 3=1(-2)+b \\
-5=b & 5=b
\end{array}
$$

$y=3 x-5$

$$
y=1 x+5
$$

4. Write the equation in slope-intercept form of the line that is perpendicular to the graph of each equation and passes through the given point.
a. $y=-5 x+1 ; \quad(5,-1)$
b. $y=2 x-3$;
$y=\frac{1}{5} x+b$

$$
y=\frac{1}{5} x-2
$$

$$
\begin{equation*}
y=-\frac{1}{2} x+b \tag{6,3}
\end{equation*}
$$

$$
-1=\frac{1}{5}(5)+b
$$

$$
3=-\frac{1}{2}(6)+b
$$

$-2=b$
$6=b \quad y=-\frac{1}{2} x+6$
5. Are the lines L1 and L2 passing through the given pairs of points parallel, perpendicular or neither?
a. L1:(1,2),(3,1);
L2:(0,1),(2,0)
b. L1:(0,3), (3,1);
L2:(-1,4),(-7,-5)
$\frac{1-2}{3-1}=-\frac{1}{2} ;$
$\frac{0-1}{2-0}=-\frac{\mathbf{1}}{2}$
$\frac{1-3}{3-0}=\frac{-2}{3} ; \quad \frac{-5-4}{-7-(-1)}=\frac{-9}{-6}=\frac{3}{2}$
Parallel

