

- (1) Write an equation for the lines that satisfy the following conditions:

contains (3, -1) and (1, 4)

is perpendicular to $x - 3y + 6 = 0$ and passes through the point (4, 2)

- (2) Write the following with interval notation.

$$-3 \leq x < 4$$

$$x < -1 \text{ or } x \geq 2$$

- (3) Solve each equation or inequality.

$$|x| = 6$$

$$|x| < 6$$

$$|x| > 6$$

- (4) Solve.

$$|x - 3| = 4$$

$$|x - 3| > 4$$

Solve the inequality $|x - 3| < 4$ AND explain what this represents in terms of distance.

- (1) Write an absolute value inequality that represents the following statement and then solve the inequality.

The distance from x to -4 is less than 12 .

- (2) Write a sentence about distances that could be an interpretation of the following absolute value inequality.

$$|x - 6| > 2$$

- (3) Write a sentence about distances that could be an interpretation of the inequality at the right. Then solve this inequality.

$$|x - 3| < |x + 5|$$

- (4) Solve the following inequalities.

$$(x - 5)(x + 2) < 0$$

$$\frac{x - 4}{x(x + 1)} \geq 0$$

- (5) Use dotted lines to sketch the graphs of $y = 1/x$ and $y = x^2$ on the axes to the right. Then add y -values to sketch the graph of $y = 1/x + x^2$.

