

Writing & Graphing Linear Inequalities

Review Inequality Symbols & Words:

	Greater than:	Greater than or equal to:	Less than:	Less than or equal to:
Symbol				
Words				

(1) A server earns a wage of \$4 per hour plus \$2 for coming in for the shift. However, the server always earns some money in tips, so that wage is a minimum for what the server can earn in one shift. Write a linear inequality for the amount the server can earn y in a shift of x hours. Graph the inequality.



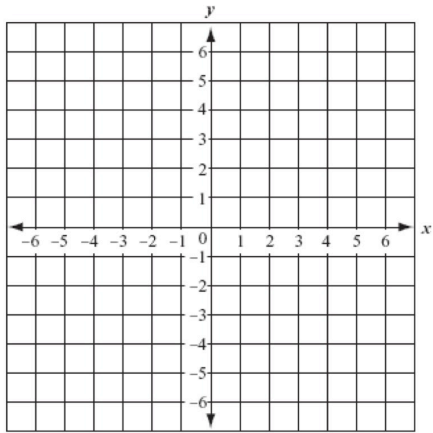
(2) Graph the linear inequality.

$$3x - 2y > 10$$

Steps for Graphing Linear Inequalities

- (1)
- (2) Start at the _____.
- (3) Write slope as _____ to plot points.
- (4) Connect points with _____ line if _____ or _____.
Connect points with _____ line if _____ or _____.
- (5) Shade _____ line if _____.
Shade _____ line if _____.

Test the point $(0, 0)$ to be sure you shaded correctly.



(3) For each inequality, determine whether the line would be dotted (D) or solid (S). Determine whether you would shade above (A) or below (B) the line.

a. $y > 2x + 2$

b. $y \leq \frac{3}{2}x - 5$

c. $y < \frac{7}{3}x + \frac{8}{3}$

Multiple Choice Practice

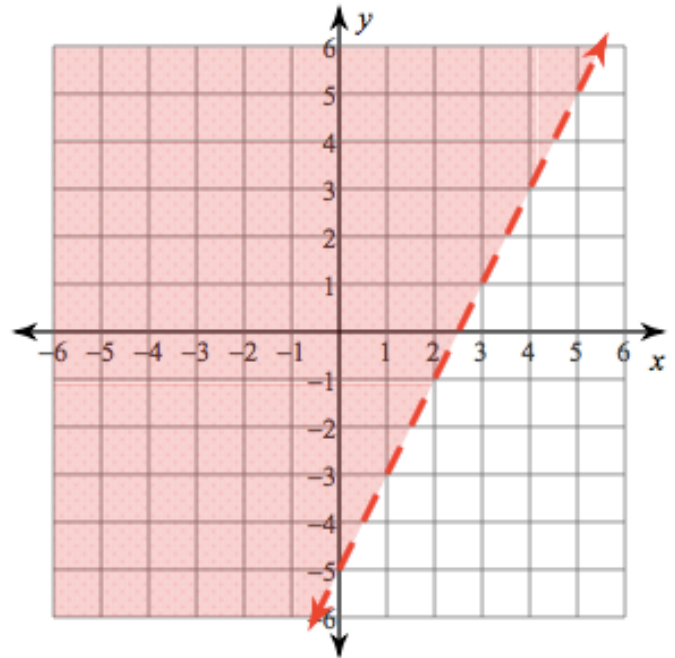
(1) What is the inequality for the graph on the right?
EXPLAIN why each INCORRECT answer is incorrect.

a. $y < 2x - 5$

b. $y < 2x + 5$

c. $y > 2x - 5$

d. $y \geq 2x - 5$



Test the point (0, 0) in the inequality you chose and show your work. Does this test confirm your answer?

(2) Ms. Draper's sister has already painted 2 letters for wall decorations for her friend. She can paint at most 5 letters per hour. Write an inequality for the number of letters she can paint, y , given the number of hours, x , she has been painting.

a. $y \leq 2x + 5$

b. $y \leq 5x + 2$

c. $y \geq 7x$

d. $y \geq 2x + 5$

(3) Cameron has a maximum of \$5 to spend on healthy snacks. Apples are \$1 each and oranges are \$1.50 each. Write an inequality to represent the situation if x is number of apples and y is number of oranges.

a. $y \leq 2.50x$

b. $1.50y \leq x + 5$

c. $x + 1.50y \geq 5$

d. $x + 1.50y \leq 5$