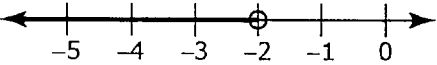
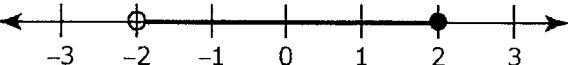


Inequalities Review

1. Write a word statement to express the meaning of each inequality.

Inequality	Word Statement
a) $m > -2$	
b) 	
c) 	
d) $m \geq 2$	

2. Circle true or false for each of the following statements. If the statement is false, rewrite it to make it true.

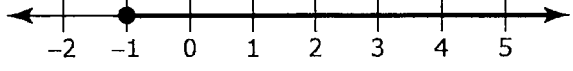
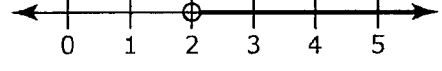
a) **True / False** A closed circle indicates that the boundary point is not a possible value.

b) **True / False** The inequality $-4 < x$ means x is greater than -4 .

c) **True / False** A boundary point is always shown on a number line using an open circle.

For #3 to #6, fill in the missing information.

- a) Represent the inequality verbally using a real-life context.
- b) Represent the inequality graphically.
- c) Represent the inequality algebraically.

Real-World Situation	Number Line	Inequality Statement
<p>Example: The height of a rocket that is launched 1 m below sea level</p>		$h \geq -1$, where h is the height of the rocket
<p>3. The temperature below -4°C</p>		
<p>4.</p>		$2 \geq x$
<p>5.</p>		
<p>6.</p>		$x \geq 0$ and $x \leq 5$

7. List three values for x that would make each inequality or combination of inequalities true.

a) $x \leq -4$ _____

b) $x > -3$ _____

c) $x \geq -2$ and $x \leq 5$ _____

8. Solve each inequality.

a) $x + 5 \leq 12$	b) $2 > x - 9$	c) $7.4 + x \geq 6.2$
d) $x - 4.2 < 3.5$	e) $-1.3x > 16.9$	f) $\frac{x}{5} \leq -4$
g) $-\frac{1}{4}x \geq 3$	h) $3x - 5 > 2x + 4$	i) $4x + 3.2 < 2x + 1.4$

9. Solve. Draw a number line to represent each solution.

a) $9x + 4 \leq 5x + 12$	b) $5x - 2 > 9x - 10$
Number Line:	Number Line:
c) $3(2x - 3) < 13 + 2(x - 1)$	d) $4(2x - 1) - 5(x + 1) \geq 9$
Number Line:	Number Line:

10. Verify if the specified solution is correct for each inequality.
(Test at boundary and at a point on either side)

a) $2x < -10; x > -5$

b) $-3x \leq -24; x \leq 8$

c) $-9 \geq -\frac{1}{3}x; 3 \geq x$

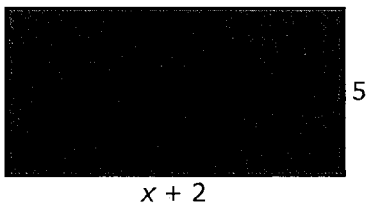
d) $x + 8 < -12; x < 20$

11. A balloon company guarantees that at least 18 of the balloons in each package are red. Fifteen percent of the balloons are red. What is the number of balloons in a package?

- a) Write an inequality to model the situation.
- b) Solve and verify the inequality.
- c) Represent your answer verbally and graphically.

12. a) Write and solve an equation to determine the values of x that give the rectangle shown an area of no more than 25 square units.

b) Are there values of x that would not be possible for the length of the rectangle? Explain.



13. Your parents are celebrating their 25th wedding anniversary. They have compared the rates at two banquet halls. Fancy Feast charges \$200 for the hall plus \$30 per person. Beautiful Banquet charges \$400 for the hall plus \$20 per person.

- a) Write an inequality to represent the number of people who could attend the celebration at Fancy Feast with a cost of no more than \$2000.
- b) How many people need to attend to make Beautiful Banquet more cost efficient? Show your work.

14. The following are the wages for two summer jobs building grain bins.

Job A: \$60 per bin plus \$120 per day

Job B: \$75 per bin plus \$90 per day

Write and solve an inequality to determine how many grain bins you would need to build each day to make Job B pay more than Job A.