2.4.D2 – COMPOUND INEQUALITIES

Name: _____

Past due on: _____ Period: _____

Write each compound inequality in compact form. Use x as your variable. *Refer to the 2.4 example "Writing Compound Inequalities" in the Chapter 2 Summary.*

1. All numbers less than 55 <u>and</u> greater than 45.

2. All numbers greater than 10 <u>or</u> less than 1000.

3. All numbers less than or equal to 87 <u>and</u> greater than or equal to 83.

4. The number of houses that will be built in the new neighborhood must be at least 14 and no more than 28.

5. At the High and Low Store, they sell high-end items that sell for over $1000 and low-end items that sell for less than $10.

Write and solve an inequality to answer the question. *Refer to the 2.3 example "Writing & Solving Inequalities" in the Chapter 2 Summary.*

6. Leon plays on the varsity basketball team. So far this season he has scored a total of 52 points. He scores an average of 13 points per game. The function $f(x) = 13x + 52$ represents the total number of points Leon will score this season. How many more games must Leon play in order to score fewer than 182 points?

Write a compound inequality for each graph. Identify it as a conjunction or as a disjunction. *Refer to the 2.4 example "Representing the Solutions to Compound Inequalities on a Number" in the Chapter 2 Summary.*
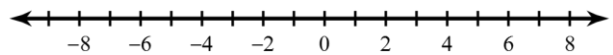
7.

8.

9.

10.
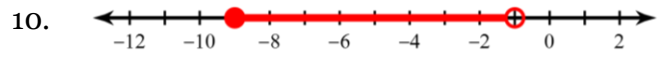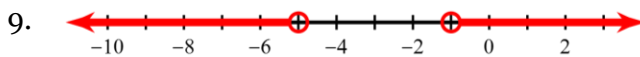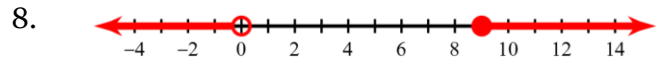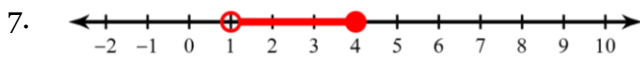
Represent the solution to each pair of the compound inequality on the number line. Then write the final solution that is represented by each graph. *Refer to the 2.4 example "Representing the Solutions to Compound Inequalities on a Number" in the Chapter 2 Summary.*
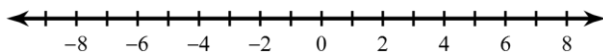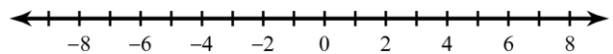
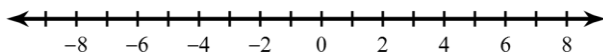11. $-5 < x < 5$
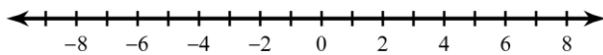
12. $-6 > x$ or $x \leq 2$
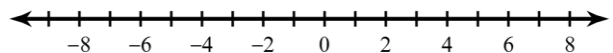

13. $x > 2$ or $x \leq 7$

14. $x > 2$ and $x \leq 7$

15. $x > -3$ or $x > 6$

16. $x \geq 5$ or $x < 3$

Complete the table to represent each problem situation. Identify the y-intercept and its contextual meaning. *Refer to the 2.2 example "Comparing Tables, Equations, and Graphs to Model and Solve Linear Situations" in the Chapter 2 Summary.*

17. A fish tank filled with 12 gallons of water is drained. The water drains at a rate of 1.5 gallons per minute.

Identify the y-intercept. What is its contextual meaning?

	INDEPENDENT QUANTITY	DEPENDENT QUANTITY
QUANTITY		
UNITS		
	0	
	1	
	3	
		4.5
		1.5
EXPRESSION		

Draw an oval on the graph to represent the solution to the inequality. Write the corresponding inequality statement. *Refer to the 2.3 example "Representing Inequalities on a Coordinate Plane" in the Chapter 2 Summary.*

18. Lea is walking to school at a rate of 250 feet per minute. Her school is 5000 feet from her home. The function $f(x) = 250x$ represents the distance Lea walks. How many minutes have passed if Lea still has more than 2000 feet to walk?
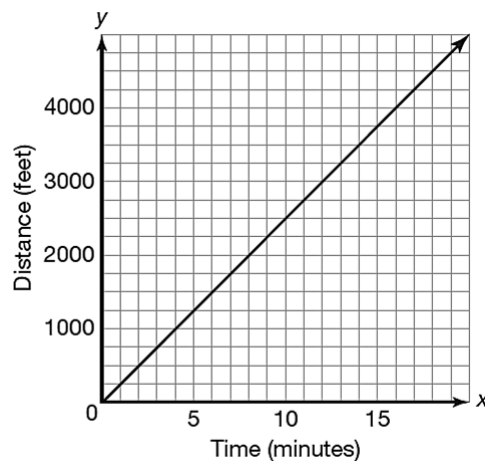
19. A submarine is diving from the surface of the water at a rate of 20 feet per minute. The function $f(x) = -20x$ represents the depth of the submarine as it dives. How many minutes have passed if the submarine is at least 160 feet below the surface?