Name _____ Class _____ Date _____

Chapter 3 Part B Test

Form K

Lessons 3-5 through 3-8

Do You Know HOW?

1. Suppose $U = \{3, 6, 9, 12, 15, 18, 21\}$ is the universal set and $M = \{3, 9, 15, 21\}$. What is M'?

   $M' = \{6, 12, 18\}$

2. How do you write "F is the set of positive integers less than 7" in roster form? How do you write F in set-builder form?

   $F = \{1, 2, 3, 4, 5, 6\}$; $F = \{x \mid x \text{ is an integer, } 0 < x < 7\}$

Solve each compound inequality.

3. $4 < n + 7 \leq 12$

   $-3 < n \leq 5$

4. $-1 \leq -4k \leq 8$

   $-2 \leq k \leq \frac{1}{4}$

5. $4y < -24$ or $6y > 12$

   $y < -6$ or $y > 2$

6. $-2p \leq -18$ or $3p < 9$

   $p \geq 9$ or $p < 3$

7. In order to receive a B on an essay, the grade must be no lower than an 82% and no higher than an 89%. Write a compound inequality to represent the range of scores to earn a B on the essay.

   $82 \leq s \leq 89$

8. The speed limit on the road is 55 mph. The police officer is using a radar device to monitor speed. He allows people to exceed the limit by 5 mph or drive under the limit by 10 mph without giving them a ticket. Write a compound inequality representing the speed which drivers can travel without getting a ticket.

   $45 \leq s \leq 60$

9. Jackson wants to earn between \$450 and \$600, exclusive, per week. He earns \$15 per hour. Write a compound inequality to represent the range of hours that Jackson needs to work per week.

   $30 < h < 40$

10. What are all the subsets of $\{3, 5, 7\}$?

    $\emptyset$, {3}, {5}, {7}, {3, 5}, {3, 7}, {5, 7}, {3, 5, 7}

Name _____ Class _____ Date _____

Chapter 3 Part B Test (continued)

Form K

Lessons 3-5 through 3-8

Solve each equation or inequality. If there is not a solution, write *no solution*.

11. $|x| = 5$

***x* = 5, −5**

12. $|a + 2| > 4$

***a* > 2 or *a* < −6**

13. $|3z - 6| = 9$

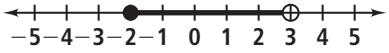
***z* = −1, 5**

14. $|v + 4| \leq 10$

−14 ≤ *v* ≤ 6

Write a compound inequality that each graph could represent.

15.



Answers may vary. Sample: −2 ≤ *x* < 3

16.

Answers may vary. Sample: *x* ≤ 0 or *x* > 1

17. The thermostat setting keeps the temperature in a building within 2 degrees of the set temperature. If the thermostat is set at 71°, find the range of possible temperatures.

69 ≤ *t* ≤ 73

18. Given $F = \{3, 5, 7, 9, 11, 13\}$ and $G = \{2, 5, 8, 11\}$, what is $F \cup G$?

***F* ∪ *G* = {2, 3, 5, 7, 8, 9, 11, 13}**

19. There are 28 members of the football team that also run track. There are 58 boys on the track team. How many boys only run track?

30

Do You UNDERSTAND?

20. Open-Ended Write an absolute value inequality that has 3 and −6 as two of its solutions.

Answers may vary. Sample: |*x* + 2| > 2

21. Writing Explain why $|4x| + 7 = 2$ has no solution.

When you subtract 7 from each side, you are left with an absolute value equal to a negative number, which is impossible.