Inequalities Practice Test

Multiple Choice (80 points, 5 points each)
Identify the choice that best completes the statement or answers the question.

1. Translate the word sentence into an inequality:
"2 less than a number is more than 8."

A. $x + 2 < 8$
B. $x - 2 < 8$
C. $x - 2 > 8$
D. $x + 2 \leq 8$

2. Ms. Salgado needs to have her car repaired but does not want to spend more than $375 for the repairs. The mechanic says that the part needed for the repair will cost $100 and the labor will cost an additional $40 per hour. Which inequality below represents the greatest number of hours the mechanic can work without exceeding Ms. Salgado's budget?

A. $140x \leq 375$
B. $40 + 100x > 225$
C. $100 + 40x \leq 375$
D. $100 + 40x > 375$

3. Solve: $\frac{-x}{3} < 5$

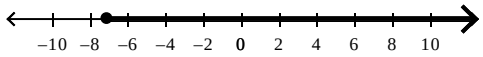
A. $x > -15$
B. $x < 36$
C. $x < 15$
D. $x > -2$

4. Solve: $\frac{4x + 6}{7} < 2$

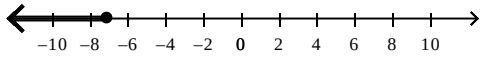
A. x > 7
B. x > -7
C. x < -2
D. x < 2

5. Solve and graph.
$3t - 12 \leq -9$

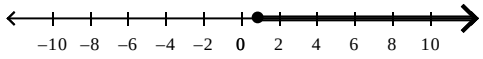
A. $t \geq -7$



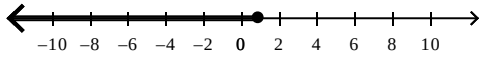
B. $t \leq -7$



C. $t \geq 1$

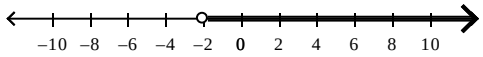


D. $t \leq 1$

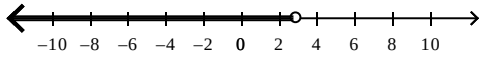


6. Solve and graph.
$c - 10 + 3c < 2$

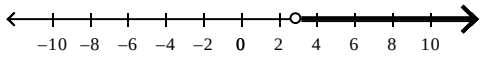
A. $c > -2$



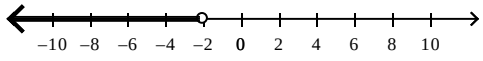
B. $c < 3$



C. $c > 3$



D. $c < -2$



7. Write and solve the algebraic inequality.
The product of –3 and a number is at least –24.

A. $-3x \geq -24$; $x \leq 8$
B. $-3x \geq -24$; $x \geq 8$
C. $-3x < -24$; $x > -8$
D. $-3x > -24$; $x > -8$

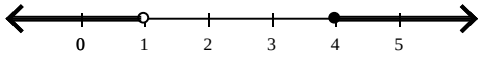
8. Solve and graph the solutions of the compound inequality $2 < 4x - 2 \leq 14$.

A. $1 \leq x$ AND $x \leq 4$

B. $1 < x$ AND $x < 4$

C. $1 < x$ AND $x \leq 4$

D. $1 > x$ AND $x \geq 4$



9. Rhonda raised $245 for her softball team's fundraiser. She wants to raise no less than $455. Write and solve an inequality to determine how much more money Rhonda must raise to reach her goal. Let *d* represent the amount of money in dollars Rhonda must raise to reach her goal.

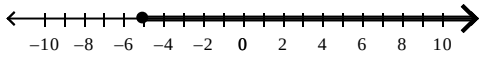
A. $245 + d \geq 455$; $d \geq 210$
B. $245 + d \geq 455$; $d > 455$
C. $245 + d = 455$; $d = 210$
D. $245 + d > 455$; $d > 210$

10. Solve the inequality $3(k - 9) > 3k + 6$.

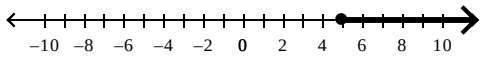
A. $k > -3\frac{1}{2}$
B. no solution
C. all real numbers
D. $k > 5\frac{1}{2}$

11. Solve and graph. $-6(4y - 3) \geq -102$

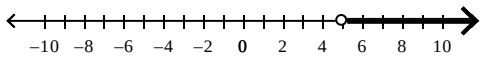
A. $y \geq -5$



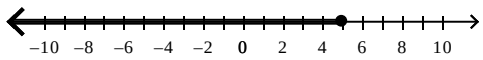
B. $y \geq 5$



C. $y > 5$



D. $y \leq 5$



12. Solve. $11b + 6 \geq 14b + 3$

A. $b \geq 1$
B. $b \geq -3$
C. $b \leq 1$
D. $b \geq -1$

13. Skate World offers birthday parties for a fee of $130 plus $3 per person. If you can spend no more than $190 on your party, what is the maximum number of people who can attend?

A. 15
B. 12
C. 20
D. 14

14. Sara earns $9 per hour babysitting. She must earn a minimum of $81 next month to attend a concert. If *h* represents the number of hours Sara babysits, write an inequality to describe the situation.

A. $9h \leq 81$
B. $9h \geq 81$
C. $9h > 81$
D. $9h < 81$

15. Solve the inequality.
$2(y + 6) \leq 3y$

A. $y \leq 12$

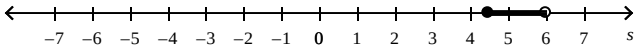
B. $y > 12$

C. $y \leq 6$

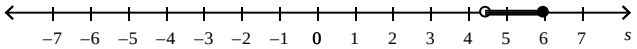
D. $y \geq 12$

16. Solve and graph the compound inequality.
$s - 3 \leq 1.5$ OR $2 + s > 8$

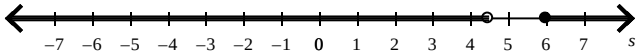
A. $s \leq 4.5$ OR $s \leq 6$



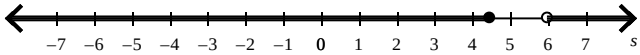
B. $s \leq 4.5$ OR $s \leq 6$



C. $s \leq 4.5$ OR $s > 6$

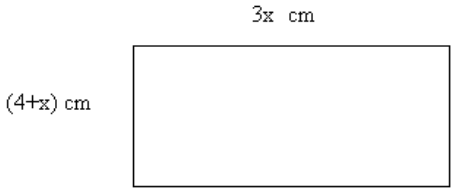


D. $s \leq 4.5$ OR $s > 6$

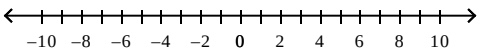


Short Answer: (20 points, 5 points each)
Solve each of the following.

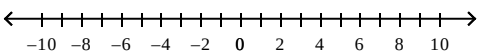
17. What is the value of x, such that the perimeter of the rectangle shown is at least 48 centimeters?



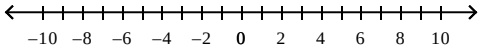
18. Graph the solution to: $-3 \geq x$.



19. Graph the solution to: $\frac{b}{4} - 12 > -11$



20. Solve the inequality and graph.
$2x + 2 < 2(3x - 1)$



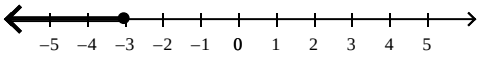
Inequalities Practice Test
Answer Section

MULTIPLE CHOICE

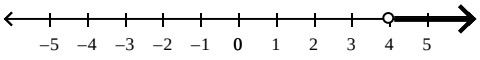
1. C
2. C
3. A
4. D
5. D
6. B
7. A
8. C
9. A
10. B
11. D
12. C
13. C
14. B
15. D
16. D

SHORT ANSWER

17. $(4+x) + 3x + (4+x) + 3x \geq 48$;
    $x \geq 5$
18. $x \leq -3$



19.



20. $x > 1$