Grade 9 Ch. 6 Test Review Equations & Inequalities   TASK 3   Name:_____

**Multiple Choice:** *Identify the choice that best completes the statement or answers the question.*

_____ 1. Solve: $5 = -2x + 11$

   a. 8   b. –8   c. 3   d. –3

_____ 2. Solve: $4x + 2.8 = 7.2$

   a. 0.4   b. –1   c. 6.5   d. 1.1

_____ 3. Solve: $\frac{x}{8} - 2 = 3$

   a. 40   b. –3   c. 19   d. 26

_____ 4. Solve: $5 = \frac{35}{w}, w \neq 0$

   a. $w = 7$ b. $w = -30$ c. $w = 175$ d. $w = \frac{1}{7}$

_____ 5. Solve: $8y = 4y - 12$

   a. $y = -3$ b. $y = 3$ c. $y = -16$ d. $y = \frac{-8}{8}$

_____ 6. Solve: $4v - 6 = -14$

   a. $v = -\frac{1}{2}$ b. $v = 2$ c. $v = -2$ d. $v = -2$

_____ 7. Solve: $1.2b + 2.6 = 10.1 - 1.3b$

   a. $b = 0.3$ b. $b = 3$ c. $b = -3$ d. $b = -0.3$

_____ 8. Solve: $3(5q - 2) = 2(4q + 5)$

   a. $q = \frac{7}{16}$ b. $q = -2\frac{2}{7}$ c. $q = -\frac{7}{16}$ d. $q = 2\frac{2}{7}$

_____ 9. Solve: $\frac{x}{4} + \frac{11}{2} = \frac{7}{4}$

   a. $x = -4$ b. $x = -60$ c. $x = -8$ d. $x = -15$

_____ 10. Use a symbol to write an inequality that corresponds to this statement: w is greater than -6

   a. $w \geq 6$ b. $w > 6$ c. $w > -6$ d. $w \geq -6$

_____ 11. Which of these graphs is a solution of $t \leq 1$?

   i)

   ii)
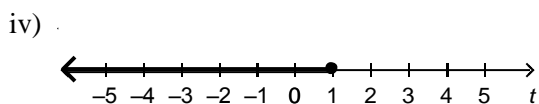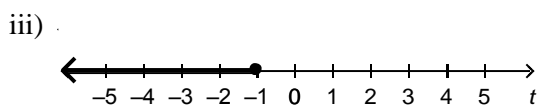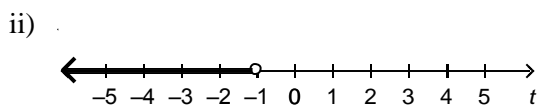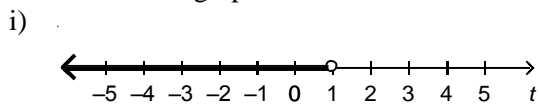
        a. Graph i   b. Graph iv   c. Graph ii   d. Graph iii

   iii)

   iv)

Short Answer

12. Solve: $\frac{6x}{4} = -12$ 13.   Solve: $\frac{4x}{5} = 4.4$

14. Solve: $\frac{y}{4} = 6$ 15.   Solve: $-5(x - 31) = 11.5$

16. A games room charges a $12 entrance fee, plus $2.55 per hour of play time. Anne-Marie has $32.40. For how long can she play in the games room?

a) Choose a variable and write an inequality for this problem.   b) Solve the inequality.

17. Solve: $5x + 22 = 18$
Verify the solution

18. The trapezoid below has side lengths 2.5 cm and 4.3 cm, and perimeter 13.6 cm.
a) Write an equation that can be used to determine the lengths of the remaining sides.
b) Solve the equation.

2.5 cm

x x

4.3 cm
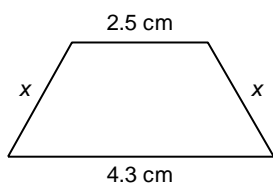
19. a)   Graph the solutions to these two inequalities on the same number line.
$x < -1$ and $x \geq 7$

−10 −9 −8 −7 −6 −5 −4 −3 −2 −1 0 1 2 3 4 5 6 7 8 9 10 x
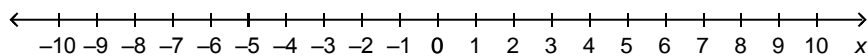
b) i)   Write 3 points that are less than -1.
ii) Write 3 points that are greater than or equal to 7.

Grade 9 ch. 6 Test Review Equations & Inequalities TASK 3a
Answer Section

MULTIPLE CHOICE

1. ANS: C
2. ANS: D
3. ANS: A
4. ANS: A
5. ANS: A
6. ANS: C
7. ANS: B
8. ANS: D
9. ANS: D
10. ANS: C
11. ANS: B

Short Answer:

12. ANS:
-8

13. ANS:
5.5

14. ANS:
$\frac{y}{4} = 6$
   $Y = 24$

15. ANS:
28.7

16. ANS:
a) Let h represent the number of hours of play time.
   $12 + 2.55h \leq 32.4$
b) $h \leq 8$

17. ANS:
$5x + 22 = 18$
$5x + 22 - 22 = 18 - 22$
$5x = -4$
$\frac{5x}{5} = \frac{-4}{5}$
$x = -0.8$

To verify the solution, substitute $x = -0.8$ into $5x + 22 = 18$.
Left side $= 5x + 22$ Right side $= 18$
        $= (5)(-0.8) + 22$
        $= -4 + 22$
        $= 18$
Since the left side matches the right side, $x = -0.8$ is correct.

18. ANS:
a) Equation to determine the lengths of the remaining sides:

$$x + 2.5 + x + 4.3 = 13.6$$
$$x + x + 2.5 + 4.3 = 13.6$$
$$2x + 6.8 = 13.6$$
$$2x + 6.8 - 6.8 = 13.6 - 6.8$$
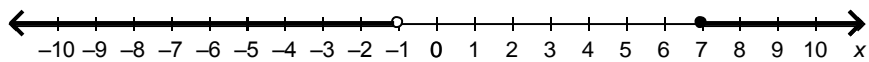$$2x = 6.8$$

b)
$$2x = 6.8$$
$$\frac{2x}{2} = \frac{6.8}{2}$$
$$x = 3.4$$

The length of each remaining side is 3.4 cm.

19. ANS:
a)

b) i) Answers will vary.
   Any 3 points to the left of −1 on the number line, excluding −1.
   For example: –3, –7, –10

   ii) Answers will vary.
   Any 3 points that are greater than or equal to 7. For example: 12, 15, 24