GRADE 7 · UNIT 10 · PRACTICE TEST

Equations and Inequalities

24 points

Name_____
Date_____
Period_____

Show your work for problems that require calculations. Each numbered question or lettered part is worth 1 point.

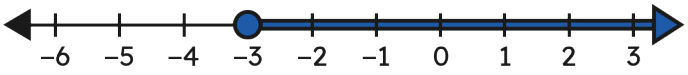
One-step inequalities

10 points

1. Which of the following values of x make the inequality $x + 4 < 2.5$ true? Select all that apply. *1 pt*

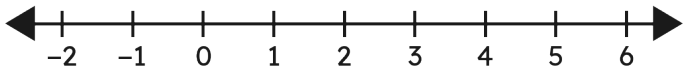
- ☐ A. −2
- ☐ B. −1.5
- ☐ C. −3
- ☐ D. 0
- ☐ E. −1.6

2. Write an inequality using the variable x that represents the graph below. *1 pt*



3. Use the inequality below to answer parts (a) and (b).

$1.5 \geq m - 2.5$

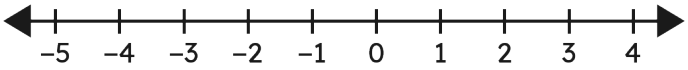


a. Solve the inequality. *1 pt*

b. Graph the solution on the number line. *1 pt*

4. Use the inequality below to answer parts (a) and (b).

$-1.5k > 3$



a. Solve the inequality. *1 pt*

b. Graph the solution on the number line. *1 pt*

5. Solve the inequality. $6 - x > -2$ *1 pt*

6. Which inequality represents the solution to $\frac{3}{5}x \geq -6$? *1 pt*

- ○ A. $x \geq -3.6$
- ○ B. $x \leq -10$
- ○ C. $x \geq -10$
- ○ D. $x \leq -3.6$

7. Seven times a number, n, is at most 45.

- ○ A. $7n \geq 45$
- ○ B. $n + 7 \leq 45$
- ○ C. $7n \leq 45$
- ○ D. $45n \leq 7$

a. Which inequality represents this statement? Write its letter. *1 pt*

b. If n is a whole number, what is the greatest possible value of n? *1 pt*

Two-step equations

14 points

8. Solve the equation. $-7x + 9 = 44$ *1 pt*

9. Solve the equation. Give an exact answer without rounding. $\frac{3}{4}n - 5 = 3$ *1 pt*

10. Solve the equation. $-3.4 = 1.8 + 0.4w$ *1 pt*

11. Solve the equation. $5(x + 2.4) = 17$ *1 pt*

12. Solve the equation. $-\frac{1}{2}(k - 6) = 4$ *1 pt*

13. Which value of y makes the equation $1.5y + 7 = -2$ true? *1 pt*

- ○ **A.** -9
- ○ **B.** $\frac{10}{3}$
- ○ **C.** -13.5
- ○ **D.** -6

14. A climbing gym charges $9.50 per hour. It also charges a one-time $15 entry fee. Dee paid $53 in all.

- ○ A. $9.50h + 15 = 53$
- ○ B. $15h + 9.50 = 53$
- ○ C. $9.50(h + 15) = 53$
- ○ D. $9.50h − 15 = 53$

a. Which equation can be used to find h, the number of hours Dee climbed? Write its letter. *1 pt*

b. Solve the equation. How many hours did Dee climb? *1 pt*

15. Four friends each buy a movie ticket and a snack. Each snack costs $3.50. The friends spend $58 altogether.

- ○ A. $4t + 3.50 = 58$
- ○ B. $3.50(t + 4) = 58$
- ○ C. $4(t − 3.50) = 58$
- ○ D. $4(t + 3.50) = 58$

a. Which equation can be used to find t, the price of one movie ticket? Write its letter. *1 pt*

b. Solve the equation. What is the price of one movie ticket? *1 pt*

16. A helmet is on sale for 30% off its original price. Ana then uses an $8 coupon and pays $55.

- ○ A. $0.30p - 8 = 55$
- ○ B. $0.70p - 8 = 55$
- ○ C. $0.70(p - 8) = 55$
- ○ D. $0.70p + 8 = 55$

a. Which equation can be used to find p, the original price of the helmet? Write its letter. *1 pt*

b. Solve the equation. What was the original price of the helmet? *1 pt*

17. A hot-air balloon begins at a height of 1,800 feet and descends at a constant rate of 120 feet per minute.

- ○ A. $1{,}800 + 120m = 600$
- ○ B. $120 - 1{,}800m = 600$
- ○ C. $1{,}800 - 120m = 600$
- ○ D. $120m - 1{,}800 = 600$

a. Which equation can be used to find m, the number of minutes it takes the balloon to reach a height of 600 feet? Write its letter. *1 pt*

b. Solve the equation. How many minutes will it take the balloon to reach a height of 600 feet? *1 pt*