

Measures of Center and Spread

Algebra 1 • Section 10.1

Name: _____

Date: _____

Score: _____ / 12

Quick Review and Helpful Hints

Work carefully from the structure of the expression or model. Write the setup first, perform one valid algebra move at a time, and check whether the answer fits the question.

Q Example: Solve $2x + 7 = 19$.

Work: Subtract 7 to get $2x = 12$, then divide by 2.

Answer: $x = 6$

Practice Problems

Solve each problem. Show enough work that another student could follow your thinking.

1. Simplify $3(x + 4) - 2x$. _____

6. Evaluate $f(3)$ for $f(x) = 2x - 1$. _____

2. Evaluate $2a^2 - 5$ when $a = 4$. _____

7. Factor $x^2 + 7x + 12$. _____

3. Solve $5x - 7 = 18$. _____

8. Solve $x^2 - 16 = 0$. _____

4. Solve $3x + 2 < 14$. _____

9. Simplify $3(x + 4) - 2x$. _____

5. Find the slope through $(1, 4)$ and $(5, 12)$. _____

10. Evaluate $2a^2 - 5$ when $a = 4$. _____

Word Problems

11. A plan charges \$12 plus \$4 per month. Write the cost for m months. _____

12. A line has slope 3 and passes through $(2, 10)$. Find its equation. _____



Answer Keys

1. $x + 12$

2. 27

3. $x = 5$

4. $x < 4$

5. 2

6. 5

7. $(x + 3)(x + 4)$

8. $x = \pm 4$

9. $4m + 12$

10. $y = 3x + 4$

11. $x + 12$

12. 27

Step-by-Step Explanations

1. Distribute first: $3(x + 4) = 3x + 12$. Then combine $3x - 2x$ to get $x + 12$.

2. Substitute 4 for a : $2(4)^2 - 5 = 2(16) - 5 = 32 - 5 = 27$.

3. Add 7 to both sides to get $5x = 25$, then divide by 5.

4. Subtract 2 to get $3x < 12$, then divide by positive 3, so the inequality direction stays the same.

5. Use rise over run: $(12 - 4)/(5 - 1) = 8/4 = 2$.

6. Replace x with 3: $f(3) = 2(3) - 1 = 5$.

7. The numbers 3 and 4 multiply to 12 and add to 7, so they are the factors.

8. Move from $x^2 = 16$ to square roots. Both 4 and -4 square to 16.

9. The fixed cost is 12, and the monthly part is $4m$, so the total is $4m + 12$.

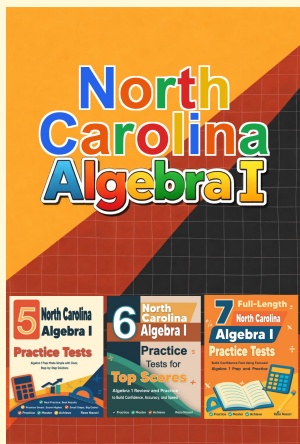
10. Use $y = mx + b$. Substitute (2, 10): $10 = 3(2) + b$, so $b = 4$.

11. Distribute first: $3(x + 4) = 3x + 12$. Then combine $3x - 2x$ to get $x + 12$.

12. Substitute 4 for a : $2(4)^2 - 5 = 2(16) - 5 = 32 - 5 = 27$.



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