

Measures of Center and Spread

Algebra 1 • Section 10.1

Name: _____

Date: _____

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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.

▷ **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. Hand the 3 to everything in the parentheses first: $3x + 12$. Now the x -terms can meet up: $3x - 2x$ leaves just $x + 12$.

2. Swap in 4 wherever you see a . Square before you multiply, so $2(16) = 32$, and $32 - 5$ lands you at 27.

3. Undo the steps in reverse: clear the -7 by adding 7 to both sides ($5x = 25$), then split that into 5 equal parts.

4. Treat it like an equation: peel off the $+2$, then divide by 3. Since 3 is positive, the $<$ stays pointing the same way.

5. Slope just compares how much y climbs to how far x travels: y goes up 8 while x goes over 4, and $8/4 = 2$.

6. The 3 inside $f(3)$ is telling you what x is. Drop it into the rule: $2(3) - 1$ gives 5.

7. You need two numbers that multiply to 12 but add to 7. Run through the pairs and 3 and 4 fit both jobs.

8. Get to $x^2 = 16$, then ask what squares to 16. Don't forget the negative side — $(-4)^2$ works just as well as 4^2 .

9. The \$12 is a one-time charge that never changes, while \$4 repeats every month — so $4m$ for the months, plus that fixed 12.

10. Start from $y = mx + b$ with $m = 3$. The point $(2, 10)$ must fit, so $10 = 3(2) + b$ tells you $b = 4$.

11. Hand the 3 to everything in the parentheses first: $3x + 12$. Now the x -terms can meet up: $3x - 2x$ leaves just $x + 12$.

12. Swap in 4 wherever you see a . Square before you multiply, so $2(16) = 32$, and $32 - 5$ lands you at 27.



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