

# Scatter Plots and Correlation

Algebra 1 • Section 10.3

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 12

## Quick Review and Helpful Hints

A function pairs each input with exactly one output. Pay attention to what the input means, what rule is being applied, and whether the question asks for a value, a rule, a domain, or an interpretation.

**Q Example:** For  $f(x) = 2x + 5$ , find  $f(4)$ .

**Work:** Replace  $x$  with 4:  $f(4) = 2(4) + 5 = 13$ .

**Answer:** 13

## 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  $4m + 12$ .

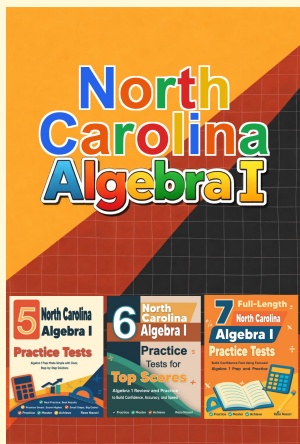
10. Use  $y = mx + b$ . Substitute (2, 10):  $10 = 3(2) + b$ , so  $b = 4$ .

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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