

Algebra I
5.5 Worksheet
Point-Slope Form

NAME: _____
DATE: _____ HOUR: _____

Find the slope of the line for each pair of points. Simplify and reduce fractions.

1. (2, 9), (1, 3) _____

2. (5, 22), (3, 12) _____

3. (9, 8), (4, 7) _____

4. (5, 8), (2, 2) _____

5. (5, 4), (7, 12) _____

6. (1, 3), (2, 8) _____

7. (7, 14), (4, 2) _____

8. (6, 4), (10, 20) _____

9. Katie has a lemonade stand where she sells each glass of lemonade for 25 cents and each cookie for 50 cents. The number of glasses of lemonade sold is represented by x , the number of cookies sold is represented by y , and her total sales are \$15.

a. Write an equation to model this situation.

$$.25x + .50y = 15$$

b. If Katie sells 20 glasses of lemonade, how many cookies must she sell to reach her total of \$15?

Show your work.

10. Point-Slope Form of an Equation: _____

DIRECTIONS: Write an equation in point-slope form for the line that has the given slope and that contains the given point.

11. slope 7, (1, 8) _____

12. slope 2, (4, 0) _____

13. slope 4, (7, 2) _____

14. slope 5, (6, 3) _____

15. slope 3, (8, 4) _____

16. slope 10, (5, 1) _____

17. slope $\frac{2}{3}$, (5, 6) _____

18. slope $-\frac{1}{4}$, (7, -5) _____

5. A linear equation can be used to describe the length of a spring, y , when it is stretched by a weight, x . A spring is 4 cm long when a 50-g weight is attached, and 6 cm long when a 74-g weight is attached. Write an equation which relates x and y .

(50, 4)

(74, 6)

6. A man whose foot is 12 in. long wears a size 12 shoe. A man whose foot is 10 in. long wears a size 6 shoe. If the shoe size, x , and the foot length, y , are linearly related, write an equation which describes that relation.

(12, 12)

(6, 10)

7. a. Find an equation for the line through $(-3, -8)$ and $(1, 1)$.

b. Does the point $(9, 19)$ lie on the line? *Justify your answer.*

8. a. Harvey began his diet when he weighed 260 pounds. After four weeks he weighed 246 pounds. If he lost weight at a constant rate, write an equation which relates his weight, y , and the number of weeks on the diet, x .

b. Why doesn't this relation work when x is large?