Math 1 **Name:** _____

Unit 2.1 Practice Rate of Change and Slope

Period: _____

Determine whether each rate of change is constant. If it is, find the rate of change and explain what it represents.

1. **Hockey Team's Offense**

Games	Goals
1	2
2	4
3	6

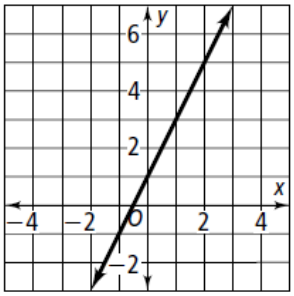
2. **Miles Per Gallon**

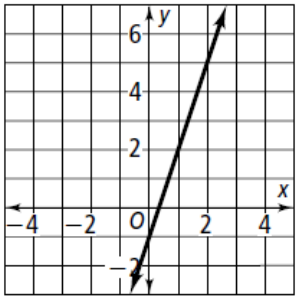
Gallons	Miles
1	28
3	84
5	140
7	196

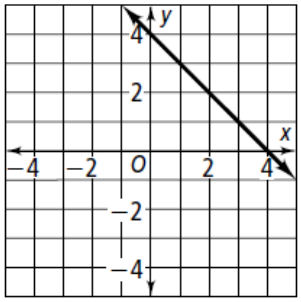
3. **Cars Washed**

Hours	Cars
1	4
2	8
3	12
4	16

Find the slope of each line.

4. 

5. 

6. 

Find the slope of the line that passes through each pair of points.

7. $(2, 1)\ (0, 0)$

8. $(4, 5)\ (6, 2)$

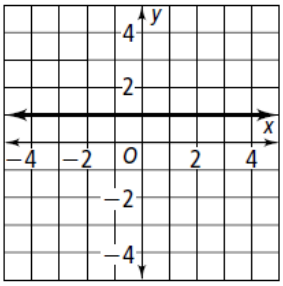
9. $(3, 8)\ (7, 3)$

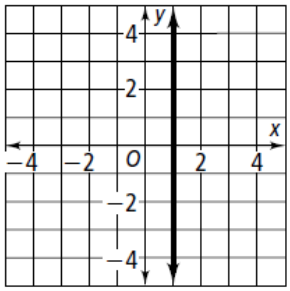
10. $(1, 0)\ (-4, 2)$

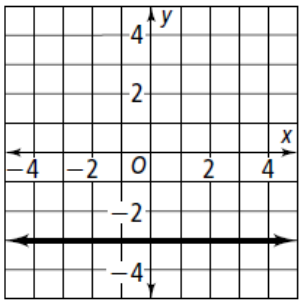
11. $(8, -4)\ (-6, -3)$

12. $(-2, -3)\ (6, 5)$

Find the slope of each line.

13. 

14. 

15. 

Without graphing, tell whether the slope of a line that models each situation is positive, negative, zero, or undefined. Then find the slope.

16. The cost of tickets to the amusement park is $19.50 for 1 ticket and $78 for 4 tickets.

17. The late fee is $2 regardless of the number of days the movie is late.

18. On the trip, Jerry had his cruise control set at 60 mi/hr for 4 hours.
    a) Answer for if using his speed:
    b) Answer for if using distance traveled:

19. The contract states that every day past the agreed upon completion date the project is not finished, the price is reduced by $25.

State the independent variable and the dependent variable in each situation. Then find the rate of change for each situation.

20. Shelly delivered 12 newspapers after 20 minutes and 36 newspapers after 60 minutes.

21. Two pounds of apples cost $3.98. Six pounds cost $11.94.

22. An airplane ascended 3000 feet in 10 minutes and 4500 feet in 15 minutes.

Find the slope of the line that passes through each pair of points.

23. $(-5, 0), (-5, 5)$

24. $(-2, -4), (-1.5, -1.5)$

25. $(4.75, -3.575), (2.25, 1.425)$

26. $\left(-\frac{1}{4}, \frac{3}{4}\right), \left(\frac{1}{2}, -\frac{3}{4}\right)$

27. $\left(\frac{2}{5}, \frac{3}{7}\right), \left(\frac{1}{5}, \frac{4}{7}\right)$

28. $(-3.35, 6.5), (5.65, -3.5)$

29. **Writing** Explain why the slope of a horizontal line is always zero.

30. **Writing** Describe how to draw a line that passes through the origin and has a slope of $-\frac{2}{3}$.

Each pair of points lies on a line with the given slope. Find x or y.

31. $(7, 4), (3, y)$; slope = $\frac{1}{4}$

32. $(5, y), (6, 4)$; slope = 0

33. $(x, 5), (-3, 6)$; slope = -1

34. $(-12, 9), (x, -2)$; slope = $-\frac{1}{2}$