

Due Date:

HOMEWORK: MATH INTERLUDES VIII - SLOPE

Directions: Remember – as always, neatness and completeness count. Also, you must show your work. The correct result without a sufficient amount of correct and appropriate work is worth zero points. Finally, please remember that you will have a cumulative Math Interludes Quiz covering Math Interludes I through VIII on the day this assignment is due, so be sure to bring your calculator to class (unfortunately, you may not use your phone or any other multi-use device as a calculator on any quiz or exam).

1) Simplify the following expressions. Round to the hundredths place if necessary.

a) $\frac{89-24}{48-35}$

b) $\frac{-9-5}{3-(-4)}$

c) $\frac{12-(-3)}{9-4}$

2) Set up ratios (including units) to answer each of the following.

a) Dog Watchdog food sells for \$57.99 for a 30-lb bag. Natural Pup dog food sells for \$22.80 for a 12-lb bag. Which brand of dog food is the better deal?

b) In a recent year, it took 14.2 hours to play five baseball games in round two of the World Series. In the same year it took 18.2 hours to play seven games in round two of the NBA playoffs. Which sport had longer games?

- 3) Hiking trail A climbs steadily for 700 feet over a horizontal distance of 6200 feet. A Hiking trail B climbs steadily for 400 feet over a horizontal distance of 3500. Which trail is steeper? Explain.
- 4) Ski run A declines steadily for 90 yards over a horizontal distance of 300 yards. Ski run B declines steadily for 125 yards over a horizontal distance of 450 yards. Which run is steeper? Explain.
- 5) Find the slope of the line passing through the given pair of points. Round to the hundredths place if necessary. Indicate whether the line is increasing, decreasing, horizontal, or vertical.
- a) $(-3, -2)$ and $(7, 10)$ b) $(5.4, 2.1)$ and $(8.2, -6.3)$
- c) $(4, -3)$ and $(7, -3)$ d) $(2, -4)$ and $(2, 5)$

- 6) Each line passes through the indicated pair of points. Find the slope of each line, and then for each pair of lines use the slopes to determine whether the lines are ***parallel***, ***perpendicular***, or ***neither***. Be sure to write each slope as a reduced fraction, and remember to show your work.

a) Line 1: $(2, 7)$ and $(-4, -2)$

Line 2: $(10, -12)$ and $(5, -9)$

b) Line 1: $(5.5, 0.8)$ and $(15, -3)$

Line 2: $(2.4, 1)$ and $(-3.8, -14.5)$

c) Line 1: $(3.5, 2)$ and $(-2.7, 14.4)$

Line 2: $(5.4, -18.8)$ and $(-6.4, 4.8)$

Math Interludes VIII Slope:

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|--------------------|---------------|--------------------------|---------------------------------|----------------------------------|---------------------------|
| 1a) 5 | 1b) -2 | 1c) 3 | 2a) \$1.93/lb, \$1.90/lb | 2b) 2.84 hrs/g, 2.6 hrs/g | |
| 3) B | 4) A | 5a) 1.2 inc | 5b) -3 dec | 5c) 0 hor | 5d) undefined vert |
| 6a) neither | | 6b) perpendicular | 6c) parallel | | |