

NAME: \_\_\_\_\_ Per: \_\_\_\_\_

## Homework #12

### Due: Friday February 2nd

1. Hoshi walks 10 meters in 3 seconds.
  - a. What is her **walking rate**?
  
  
  
  
  
  
  
  
  
  
  - b. At this rate, **how long** does it take her to walk 100 meters?
  
  
  
  
  
  
  
  
  
  
  - c. Write an **equation** that represents the distance  $d$  that Hoshi walks in  $t$  seconds.
  
2. Milo walks 40 meters in 15 seconds. Mira walks 30 meters in 10 seconds. Whose walking rate is **greater**?
  
  
  
  
  
  
  
  
  
  
3. Find the unit rate and use it to write an equation relating the two quantities.
  - a. 150 dollars for 50 t-shirts
  
  
  
  
  
  
  
  
  
  
  - b. 62 dollars to rent 14 video games
  
  
  
  
  
  
  
  
  
  
  - c. 18 tablespoons of sugar in 3 glasses of Bolda Cola
  
  
  
  
  
  
  
  
  
  
4. The longest human-powered sporting event is the Tour de France cycling race. In a particular year, the average speed for the winner of this race was 23.66 miles per hour. In that same year, the race was 2,292 miles long. How long did it take the winner to complete the race?

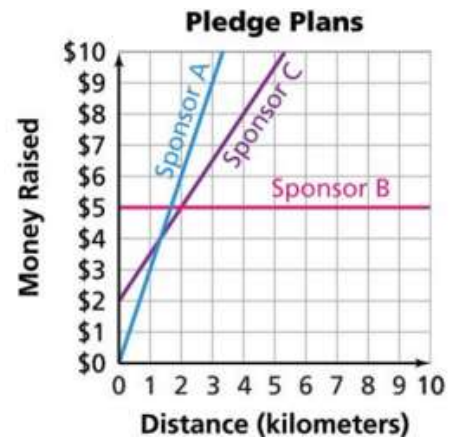
1. The graph below represents the walkathon pledge plans for three sponsors.

a. Describe each sponsor's pledge plan.

Sponsor A:

Sponsor B:

Sponsor C:



b. What is the number of dollars per kilometer each sponsor pledges?

Sponsor A:

Sponsor B:

Sponsor C:

c. What does the point where the line crosses the y-axis mean for each sponsor?

Sponsor A:

Sponsor B:

Sponsor C:

d. Write the coordinates of two points on each line. What information does each point represent for the sponsor's pledge plan?

Sponsor A:

Sponsor B:

Sponsor C:

e. Does each relationship represent a proportional relationship?

Sponsor A:

Sponsor B:

Sponsor C:

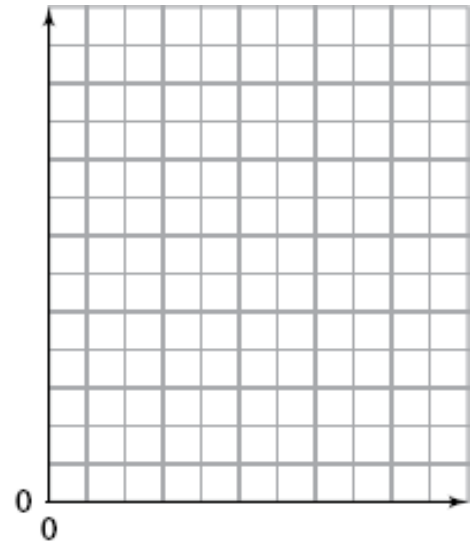
2. The students in Ms. Chang's class decide to order water bottles that advertise the walkathon. Hyun obtains two different quotes for the costs of the bottles.
- For each company, write an equation to calculate the cost for any number of bottles.

Fill it Up, Inc:

Bottles by Bob, Co:

- On the same set of axes, graph both equations from part a.
  - Which variable is the independent variable?
  - Which variable is the dependent variable?
- From which company do you think the class should buy water bottles? What factors influenced your decision.

Water Bottle Cost Estimates	
<i>Fill It Up, Inc.</i>	• \$4 per bottle
<i>Bottles by Bob, Co.</i>	• \$25 set-up fee • \$3 per bottle



3. Translate the following into algebraic notation:
- The sum of a number  $n$  and 7, multiplied by 2
  - Twice the value of  $x$  is less than the sum of 8 and a number
  - 15 is more than twice the value of  $x$
  - 10 less than 9 times a number is not equal to the difference of 4 times the number and 7

4. Underline the terms of the following expressions and equations.

a.  $2x - x^2 - 7$

b.  $\frac{x}{2} = -x^2 - 1$

c.  $x + 3x^2 \leq 6x + 8$

5. Highlight the coefficients in the following expressions.

a.  $2x - x^2 - 7$

b.  $\frac{x}{2} = -x^2 - 1$

c.  $x + 3x^2 \leq 6x + 8$

6. Circle the constants in the following expressions.

a.  $2x - x^2 - 7$

b.  $\frac{x}{2} = -x^2 - 1$

c.  $x + 3x^2 \leq 6x + 8$

### CHALLENGE (optional)

Insert **parentheses** in the expression on the left side of each equation to make each number sentence true.

a.  $2 + -3 \times 4 = -10$

b.  $4 + -3 \times -4 = -4$

c.  $-12 \div 2 + -4 = 6$

**Distributive Property.** Fill in the missing parts to make each number sentence true.

d.  $15(6 + 4) = (15 \cdot \underline{\quad}) + (15 \cdot 4)$

e.  $2(x + 6) = (2 \cdot \underline{\quad}) + (2 \cdot 6)$

f.  $(2x) + (6x) = \underline{\quad}(2 + 6)$