

Summer Math Assignments for Upcoming 8th Grade Students

For your summer homework you have 10 IXL Assignments and 4 Problem Solving Tasks to complete. If you need more room to either show work or explain your thinking please attach a separate paper. When you do your IXL assignments please include the date of completion and your score.

Assign. #	Assignment Name	Date Completed	Score Received
1	8. N.1_Coordinate plane review		
2	8.N.2_Quadrants and axes		
3	8.N.3_Follow directions on a coordinate plane		
4	8.F.1_Understanding exponents		
5	8.F.2_Evaluate exponents		
6	8. I.1_Find the constant of proportionality from a table		
7	8. I.2_Write equations for proportional relationships from tables		
8	8. I.3_Identify proportional relationships by graphing		
9	8. W.6_Solve one-step equations		
10	8. W.7_Solve two-step equations		

Task #1

CREATING A TABLE TASK

- 1) Create a table of x and y values that represents a proportional relationship.
 - a) Explain how you know the relationship is proportional.
 - b) What equation models the values in the table?

- 2) Create a table of x and y values that represents a linear, non-proportional relationship.
 - a) Explain how you know the relationship is non-proportional.
 - b) What equation models the values in the table?

Task #2
Two Oil Tanks

A full 240-gallon oil tank is being drained at the rate of 1.5 gallons / hour.

a) Graph time in hours vs. gallons left in the tank and determine whether the relationship is proportional. Explain how you made your decision.

b) Find the equation of the line and explain the meaning of the slope in the context of the problem.

c) On the same axes, graph the line for a 300-gallon tank being drained at the rate of 1.5 gallons/hour.

d) Compare the graphs and equations of the two lines and explain any similarities and differences you observe.

Task #3

A & A Most Popular Phones

Ahmed and Ashley have two of the most popular phones on the market, a Droid and an iPhone. The cost of both monthly cell phone plans are described below:

Ahmed's plan: $c = 60 + 0.05t$, where c stands for the monthly cost in dollars, and t stands for the number of texts sent each month.

Ashley's plan: \$.35 per text, in addition to a monthly fee of \$45.

a) Whose plan, Ahmed's or Ashley's, costs less if each of them sends 30 texts in a month? Use mathematical reasoning to justify your answer.

b) How much will Ashley's plan cost for the same number of texts as when Ahmed's plan costs \$75.00?

c) Is there a number of texts for which both plans cost the same amount? Use mathematical

Task #5

EZ Coasters

Emma and Zeke own an on-line business, EZ Coasters, that sells cork beverage coasters, which can be bought plain or with logos. The price for both types of coasters is \$3.00 each. There is also a one-time set-up charge of \$25 for coasters with a logo.

1) Write an equation describing the relationship between:

a) The number of plain coasters bought and the cost of the coasters.

b) The number of coasters with a logo bought and the price of the coasters.

c) Is either coaster relationship proportional? Explain in writing how you know.

d) Explain what the unit rate of the line described by each equation means in the context of the coasters.

2) EZ Sales also sells plain natural sandstone coasters for \$4.00 each.

a) Write the equation describing this relationship.

- b) Indicate whether or not it is a proportional relationship and explain why?
- c) Will the graph of this equation ever intersect the graph of the equations for either of the other two EZ Coasters? Explain in writing how you made your decision.

Task #6

Mariam's Job

Mariam makes \$50 a week.

- a) Show this relationship in a graph below.
- b) What is the unit rate of the line in the equation?
- c) What is the connection between the unit rate and the amount of money Mariam makes per week?
- d) Write the equation for this relationship.

e) Is this a proportional relationship? Justify your answer.

Task #7

Gamers and Game World

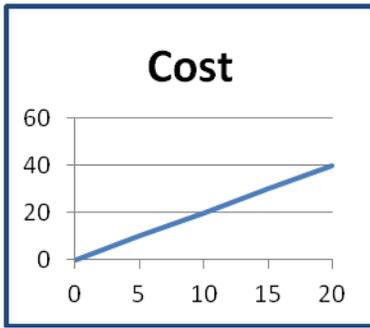
Gamers:

Two dollars for every game downloaded.

Game World:

\$15 per month and \$0.50 per game downloaded.

- a) How much money would it cost if you downloaded 6 games from **Gamers**? Show your work, using the equation $c=2d$, where c is the cost and d is the number of downloads.
- b) Write an equation for the cost per month at **Game World**, using c for cost and d for downloads.
- c) Which equation is represented in the graph below, Gamers or Game World? Justify your



d) If you plan on downloading 8 games per month, which would be the best plan to buy? Justify your answer using mathematical reasoning.

e) Justin has a membership to Gamers and he says his plan is better than Game World's. Kenny, who has a membership to Game World, disagrees. Who is correct? Justify your answer using mathematical reasoning.

f) How many games would Justin and Kenny have to download to make the same monthly payment? How do you know?

