

Direct Variation in the REAL World

An iPod Nano can hold up to 16 gigabytes (GB) of data.



- 1) How many gigabytes can be stored on 0 Nanos? **0**
 How many on 1 Nano? **16**
 How many on 5 Nano? **80**
 How many on 12 Nano? **192**

- 2) If you have enough iPod Nanos to hold 80 GB, how many iPod Nanos do you have? **5**

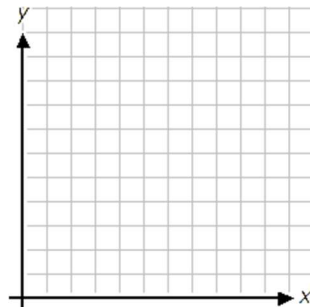
- 3) Complete the chart:

x (# of iPods)	0	2	4	10	25
y (total GB)	0	32	64	160	400

- 4) What is the direct variation equation (in terms of $y=kx$): **$y = 16x$**
- 5) Based on this problem, answer the following:
- In words, what does the input (x) represent? **# of iPod Nanos**
 - In words, what does the output (y) represent? **# of GB Total**
 - In words, what does the constant (k) represent? **# of GB per Nano**
- 6) As the number of iPods increases, the total number of GB **Increases**
- 7) Look at the values in the table above. Write each set of (x,y) values as an ordered pair

(0, 0) **(2, 32)** **(4, 64)** **(10, 160)** **(25, 400)**

- 8) Graph the ordered pairs:



Math 6 – Unit 4: One-Step Equations and Inequalities Review #2

Knowledge and Understanding

- 1) When solving equations, why is it important to substitute your solution into the equation at the end? **When you substitute your answer into the problem, you are able to check to see if it is correct.**
- 2) What is the difference between an open circle and a closed circle in an inequality? **An open circle means that the number at that point is not included in the solution set. A closed circle means the number is included.**

Proficiency of Skills

Solve each equation. Remember to show all work!

$$3) t - 1 = 11\frac{1}{2}$$

$$t = 12\frac{1}{2}$$

$$4) \frac{n}{5} = 10$$

$$n = 50$$

$$5) r + 7 = 49$$

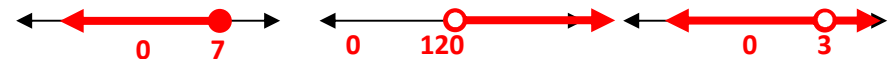
$$r = 35$$

Solve and graph the solution to each inequality. Show all work!

$$6) k \leq 7$$

$$7) a > 120$$

$$8) x \neq 3$$



Application

- 9) A quarterback threw a ball x total yards over 10 games. If he averaged 90 yards per game, write an equation that represents this situation and solve for x , the total number of yards thrown.

Equation: $\frac{x}{10} = 90$

Solution: $x = 900$

- 10) Janiah had x dollars in her bank account. After spending \$182 on Christmas gifts, she has \$200 left in her account. Write an equation and solve for x , the amount she originally had in her account.

Equation: $x - 182 = 200$

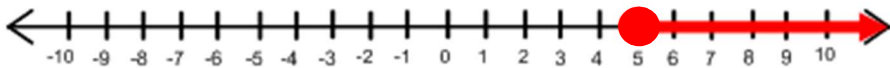
Solution: $x = \$382$

- 11) The weight limit on a cargo plane is 55 tons. Write an inequality to represent the weight limit, w , and graph it.

Inequality: $x \leq 55$



- 12) What inequality is graphed on the number line? $x \geq 5$



- 13) Maggie needs at least 15 lbs. of chocolate to make her chocolate fountain work. Write an inequality and graph it.

Inequality: $x \geq 15$



- 14) Which problem situation matches the equation $12x = 240$?
- a) Jamie sold 240 newspaper subscriptions each month for 12 months. What is x , the total number of newspaper subscriptions that Jamie sold in 1 year?
 - b) Brenna cycled a total of 240 miles this month. She cycled 12 miles less this month than last month. What is x , the number of miles Brenna cycled last month?
 - c) Mary charges \$12 per hour for labor to paint houses. What is x , the number of hours Mary worked if she charged \$240 for labor?
 - d) Sara bought 12 ride tickets and x game tickets. How many game tickets did she buy if she bought 240 tickets in all?

- 15) Andy makes \$2.50 per chore he does on the weekends. Write a direct variation equation: $y = 2.5x$

Make an (x,y) table of values and graph it.

- 16) Draw an example of a graph of direct variation. Then draw an example of a graph that is NOT a direct variation.