

Quiz A Solutions

January 10, 2014

NAME:

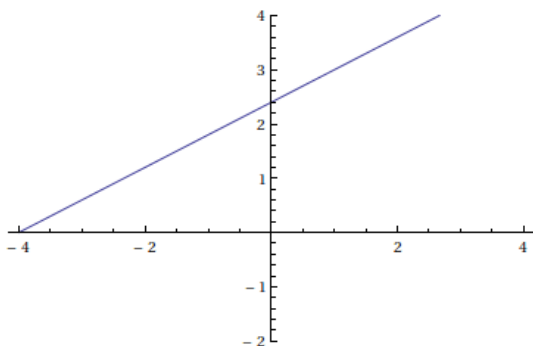
1. Simplify the following expression:

$$\frac{x^5 y^{-4}}{(y^{-3} x^2)^2} (xy^{-3})^2 = \frac{x^3}{y^4}$$

2. Solve for t in the following equation:

$$\frac{3-2t}{7} = \frac{t}{3} \quad \implies \quad t = \frac{9}{13}$$

3. Suppose that you are planning a trip to Brazil. At a Brazilian grocery store, the price of milk is 2.35 reais per liter. What is the price in US dollars per gallon? (1 dollar = 2.38 reais, 1 liter = 0.264 gallons) **Answer: \$3.74**
4. 78% of the people surveyed said that they have an internet connection in their home, and out of those, 85% said that they also have a cell phone. What percentage of surveyed people have both, an internet connection and a cell phone? **Answer: 66.3%**
5. Suppose that \$4,500 is deposited in a bank account having 2.35% annual interest, compounded yearly. What will the balance of the account be twenty years from now assuming no withdrawals and no further deposits are made? **Answer: \$7,160.93**
6. Graph the line $3x - 5y = -12$. Find the slope of the line, and the x and y intercepts.



Slope : 3/5
x-intercept : -4
y-intercept : 12/5

7. The shape below with the given dimensions is a storage tank. The model will be scaled down so that the new model will have a height of 4 ft. Find the surface area and the volume of the new model.



height = 20 ft
surface area = $1,082.7\text{ ft}^2$
volume = $2,655.7\text{ ft}^3$

NEW:

Surface Area = 43.31 ft^2
Volume = 21.24 ft^3