

Name _____

Instructions: Show your work on each problem. Each problem is worth 4 points.

1. Simplify the following expression:

$$\frac{a^6 b^{-4}}{(a^{-2} b^2)^2} \cdot (ab^{-4})^2$$

Answer _____

2. Solve for t in the following:

$$\frac{5-2t}{7} = \frac{t}{3}$$

Answer _____

3. Suppose that you are planning a vacation that will include an automobile trip to Italy. At an Italian grocery store, the price of potatoes is 1.75 euros per kilogram. What is the price in US dollars per pound? (1Euro is 1.34 US \$, 1 pound is 0.4536 kilograms)

Answer _____

4. Working with Percents: Read the sentence below carefully and then answer the related question. Show your work.

42% of the people surveyed said that they have a dog, and out of those people who said that they have a dog, 30% of them said that they also have a cat. What percentage of surveyed people have both, a dog and a cat.

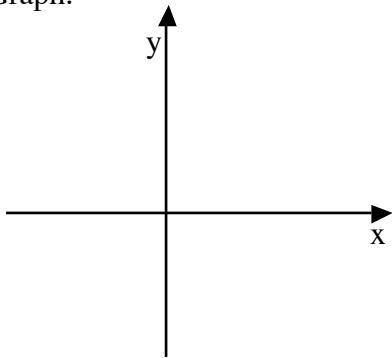
Answer _____

5. Suppose that \$1000 is deposited in a bank account having 2.5% annual interest, compounded yearly. What will the balance on the account be twenty years from now assuming no withdrawals and no further deposits are made?

Answer _____

6. Graph the line $2x - 5y = 15$. Find the slope of the line, x and y intercepts,

Graph:

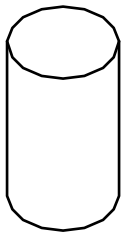


slope _____

x-intercept _____

y-intercept _____

7. The shape below with the given dimensions is a scale model for a storage tank. The model will be scaled up so that the tank will have a height of 20 feet, what will the surface area and the volume of the tank be?



NEW:

Surface area of tank _____

Volume of tank _____

height = 3 ft

surface area = 62.84 ft^2

volume = 37.7 ft^3

