

Math 201 Review for Exam 1 Fall 2009

1. For each of the following operations, write an appropriate word problem then explain the solution in detail.

(a) $125 - 47 =$

(b) $23 \times 15 =$

(c) $144 \div 16 =$

(d) $\frac{2}{3} \times \frac{1}{2} =$

(e) $\frac{2}{3} \div \frac{1}{6} =$

2. Sketch a diagram to show the relevant sums and differences in this situation and solve the problem.

The school cafeteria is ready to serve two kinds of sandwiches, tuna and ham, and two kinds of pizza, pepperoni and vegetarian. There are 46 servings of pizza prepared. There are 7 more tuna sandwiches prepared than there are servings of pepperoni pizza. There are 5 fewer ham sandwiches prepared than there are servings of vegetarian pizza.

(a) Altogether, how many sandwiches are prepared?

(b) The tuna sandwiches come in packages of 4, the ham sandwiches in packages of 5. There are three more packages of tuna sandwiches than ham sandwiches. How many tuna sandwiches, ham sandwiches, pepperoni pizzas and veggie pizzas are there?

3. Jane bought a sweater at a local store. The sweater was 20% reduced from its original price. If Jane paid \$32 for the reduced sweater, what was the original price?

A sales tax of 9% is added to the \$32. How much will she have to pay, including the tax?

4. Without calculator, express the solution to each of the following in scientific notation.

(a) $(1.2 \times 10^{-5}) \div (2 \times 10^{-7}) =$

(b) $(3.4 \times 10^{-15}) \times (6 \times 10^{23}) =$

(c) $.000,002,1 \times 101,000 =$

5. Express the following in base ten:

(a) $4,033_{\text{five}} =$

(b) $301.4_{\text{five}} =$

(c) $11,001,011_{\text{two}} =$

6. Convert the following from one base to the other:

(a) $123_{\text{ten}} =$

two

(b) $311_{\text{four}} =$

five

7. Perform the following operations in the appropriate bases.

(a)
$$\begin{array}{r} 1 \ 2 \ 2 \ 3 \ \text{five} \\ + \ 3 \ 4 \ 1 \ 2 \ \text{five} \\ \hline \end{array}$$

(b)
$$\begin{array}{r} 3 \ 2 \ 0 \ 2 \ \text{four} \\ - \ 2 \ 1 \ 2 \ 3 \ \text{four} \\ \hline \end{array}$$

8. Use the "lattice method" to calculate 456×89 . Show all details.

9. Without calculator perform the following calculations and explain the methods used:

(a) 1.02×23.5

(b) $.03 \times .22 \times .4$

(c) $1.862 \div .35$.

10. Explain how you would calculate the following in your head:

(a) 299×7

(b) $25 \times 7 \times 4$

(c) 15% of 36

11. Estimate the following in your head. Explain your reasoning.

(a) $201 \times .49$

(b) $2,497 \times 4.032$

(c) 19.8% of 79.99

12. Review previous quizzes.