Math 221: Arithmetic Competency Exam (Sample Answers)

Name: _____   Date: _____

Directions: This is a Sample Competency Exam. You will have approximately 45 minutes to answer questions like these. Please contact your instructor if you need any additional help with these topics.

1. Find the sum.
$$1036 + 305 + 203 + 57 = \boxed{1601}$$

2. Find the difference.
$$(20 - 34) - 15 = \boxed{-29}$$

3. Find the product.
$$-1025 \times 23 = \boxed{-23575}$$

4. Find the quotient and the remainder when 4981 is divided by 15.

Quotient: $\boxed{332}$ Remainder: $\boxed{1}$

5. Consider the decimal number 6091.34728.

The number in the hundreds place is $\boxed{0}$

The number in the hundredth place is $\boxed{4}$

6. Round 2.8925413 to the nearest thousandth. $\boxed{2.893}$

7. Find the sum.
$$3.09 + 14.398 = \boxed{17.488}$$

8. Find the difference.
$$21.4 - 3.891 = \boxed{17.509}$$

9. Find the product.
$$58.7 \times 0.61 = \boxed{35.807}$$

10. Divide. Round your answer to the nearest tenth.
$$84.2 \div 0.17 = \boxed{495.3}$$

Continued on back.

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For problems 11-16, fully simplify your answer (i.e., put any fraction into lowest terms).

11. Simplify (reduce) the fraction.

$$\frac{60}{462} = \boxed{\frac{10}{77}}$$

12. Find the sum.

$$\frac{1}{3} + \frac{3}{7} + \frac{2}{5} = \boxed{\frac{122}{105} \text{ or } 1\frac{17}{105}}$$

13. Subtract. Leave your answer as a (simplified) mixed number.

$$8\frac{5}{18} - 3\frac{13}{18} = \boxed{4\frac{5}{9}}$$

14. Find the product.

$$\frac{2}{5} \times \frac{3}{10} = \boxed{\frac{3}{25}}$$

15. Find the quotient.

$$\frac{7}{18} \div \frac{14}{3} = \boxed{\frac{1}{12}}$$

16. Express the decimal number 0.325 as a fraction in lowest terms.

$$\boxed{\frac{13}{40}}$$

For problems 17-18, express the fraction as a decimal. Give your answer in exact form by clearly indicating whether the decimal terminates or repeats. If it repeats, show the repeat.

17. Express $\frac{31}{40}$ as a decimal.

$$\boxed{0.775}$$

18. Express $\frac{5}{22}$ as a decimal.

$$\boxed{0.2\overline{27}}$$

For problems 19-22, answer the following word problems. Be sure to include your units.

19. At a local grocery store, 15% of the vegetables met the Organic classification. If the store has 2500 vegetables in stock, how many of the vegetables met the organic classification?

$$\boxed{375 \text{ vegetables}}$$

20. There are 320 frozen vegetables in a bag containing corn, green beans, and peas. If the bag contains 144 peas, what percentage of the vegetables in the bag are peas?

$$\boxed{45\%}$$

21. A quilt pattern calls for $3\frac{3}{8}$ yards of fabric. How many yards of fabric would you need if you wanted to buy enough for three quilts?

$$\boxed{10\frac{1}{8} \text{ yards}}$$

22. Sam Pell measures a rectangular doormat and finds that it is 24 inches long by 20 inches wide. How many square inches make up the area of the doormat?

$$\boxed{480 \text{ sq. in.}}$$