Math 221: Arithmetic Competency Exam (Sample 2 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.
$$1275 + 291 + 221 + 96 = \boxed{1883}$$

2. Find the difference.
$$(15 - 23) - 6 = \boxed{-14}$$

3. Find the product.
$$-2014 \times 83 = \boxed{-167162}$$

4. Find the quotient and the remainder when 1885 is divided by 22.

Quotient: $\boxed{85}$ Remainder: $\boxed{15}$

5. Consider the decimal number 1879.05342.

The number in the hundreds place is $\boxed{8}$

The number in the thousandth place is $\boxed{3}$

6. Round 2.89751 to the nearest hundredth. $\boxed{2.90}$

7. Find the sum.
$$20.14 + 3.892 = \boxed{24.032}$$

8. Find the difference.
$$18.42 - 5.687 = \boxed{12.733}$$

9. Find the product.
$$74.2 \times 0.56 = \boxed{41.552}$$

10. Divide. Round your answer to the nearest tenth.
$$65.9 \div 0.13 = \boxed{506.9}$$

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.

$$\frac{108}{396} = \boxed{\frac{3}{11}}$$

12. Find the sum.

$$\frac{2}{3} + \frac{4}{7} + \frac{2}{5} = \boxed{\frac{172}{105} \text{ or } 1\frac{67}{105}}$$

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

$$5\frac{4}{13} - 1\frac{23}{26} = \boxed{3\frac{11}{26}}$$

14. Find the product.

$$\frac{5}{6} \times \frac{5}{12} = \boxed{\frac{25}{72}}$$

15. Find the quotient.

$$\frac{4}{15} \div \frac{7}{30} = \boxed{\frac{8}{7}}$$

16. Express the decimal number 0.052 as a fraction in lowest terms.

$$\boxed{\frac{13}{250}}$$

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 $\frac{19}{40}$ as a decimal.

$$\boxed{0.475}$$

18. Express $\frac{7}{11}$ as a decimal.

$$\boxed{0.\overline{63}}$$

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

19. In an average math 221 class, 45% pass the competency exam on the first try. If 140 students take the competency exam one year, how many of the students are expected to pass?

$$\boxed{63 \text{ students}}$$

20. Susan sent 480 text messages in one week. If 264 of these texts were to her boyfriend, what percentage of her texts were to her boyfriend?

$$\boxed{55\%}$$

21. A recipe calls for $3\frac{1}{3}$ cups of flour. How many cups of flour would you need in order to half the recipe?

$$\boxed{1\frac{2}{3}}$$

22. A large painting at the museum measures 30 inches by 42 inches. How many square inches make up the area of the painting?

$$\boxed{1260 \text{ sq. in.}}$$