
MATH 10771: Exam #4 (Fall 2016)

1. Name **two unequal fractions** between $\frac{1}{4}$ and $\frac{7}{24}$. Write answers in simplest form. Exact answers only.

2. Simplify the following problem. Exact answers only. **Write answer as a mixed numeral in simplest form.**

$$4\frac{3}{7} \times 5\frac{5}{6}$$

3. Without using a calculator, how can you determine if the fraction $\frac{a}{b}$ has a **repeating** decimal representation? Be specific.

4. Express $0.26\overline{147}$ as a fraction. You do not need to simplify your answer.

5. Justify why we “invert and multiply” when we divide fractions using the example $\frac{19}{5} \div \frac{23}{17}$. Be specific.

6. A banquet hall has 126 tables occupied. If $\frac{2}{5}$ of the tables are not occupied, how many tables does the banquet hall have?

7. Cheyenne purchased $15\frac{3}{8}$ yards of fabric to make pillowcases for Christmas gifts. Each pillowcase requires $1\frac{1}{3}$ yards of fabric.

(a) How many pillowcases can Cheyenne make?

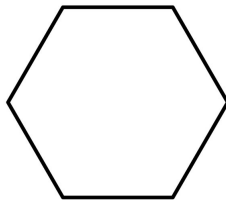
(b) How much fabric is left over? Exact answer only. NO DECIMALS. **Simplify answer.**

8. A hand mixer is on sale for 35% off the original price. If the sale price is \$36.85, what is the **original price** of the hand mixer? **Round answer to two decimal places.**

9. A recipe requires $\frac{2}{3}$ cups of butter to make 24 rolls. How many cups of butter are required to make 80 rolls? Write answer as a mixed number in simplest form. Exact answer only

10. The campus bookstore uses a markup of 22% on all college textbooks. If the bookstore sells a textbook for \$175, what was the bookstore's cost of the book? **Round answer to two decimal places.**
11. In a local survey, 4 out of every 7 participants favor Proposition X. If 564 participants **did not** favor Proposition X, how many participants did favor Proposition X?
12. In 2012, 15,278 students attended City Community College. In 2013, the enrollment was 18,324. What was the percent increase in enrollment at City Community College from 2012 to 2013? Round answer to the **nearest tenth** of a percent. For example 2.5%
13. A survey of all area fifth-graders asked their current math grade. It was found that three-eighths of the students have an A, one-fourth of the students have a B, two-sevenths of the students have a C, and 165 students are receiving a failing grade (D/F). How many area students are in the fifth grade?
14. Short Answer – Part I

- (a) Identify a property that holds for fraction multiplication but does not hold for integer multiplication. Be specific.
- (b) Illustrate $\frac{4}{5} \times \frac{2}{3}$ using a rectangular array.
- (c) The following figure represents one unit. Shade $\frac{2}{3}$.



- (d) Simplify the following and write your answer in scientific notation:
 $(6.7 \times 10^{15})(5.3 \times 10^{19})$
- (e) Simplify the following and write your answer in scientific notation:
 $\frac{1.5 \times 10^{16}}{3.75 \times 10^{11}}$
- (f) Identify a property that holds for integer addition that does not hold for fraction addition. Be specific.

15. Short Answer – Part II

- (a) Circle which number(s) in the following list are considered fractions: 0 , 2 , $\frac{6}{5}$, $-\frac{3}{4}$
- (b) Represent 0.258 as a fraction in simplest form.
- (c) Represent $\frac{152}{14}$ as a mixed numeral in simplest form.
- (d) For the decimal 158.463927 , which numeral is in the **hundred thousandths** place?
- (e) **Round** the decimal 158.463927 to the nearest **thousandths** place?
- (f) When fractions are written as decimals, they will either _____ or _____.

ANSWERS

1. There are an infinite number of answers. Some of them are: $\frac{17}{60}$, $\frac{4}{15}$, $\frac{11}{40}$, $\frac{25}{96}$
2. $25\frac{5}{6}$
3. $\frac{a}{b}$ must be in lowest terms. The prime factorization of the denominator b must contain a prime other than just 2s and/or 5s for it to be a repeating decimal.
4. $n = \frac{26121}{99900}$
5. Show using either the multiplication approach or the missing factor approach.
6. 210 tables
7. (a) 11 pillowcases
(b) $\frac{17}{24}$ yard
8. \$56.69
9. $2\frac{2}{9}$ cups of butter
10. \$143.44
11. 752
12. 19.9%
13. 1848 students
14. (a) multiplicative inverse property
(b) see instructor for answer
(c) see instructor for answer
(d) 3.551×10^{35}
(e) 4×10^4
(f) additive inverse property
15. (a) $0, 2, \frac{6}{5}$
(b) $\frac{129}{500}$
(c) $10\frac{6}{7}$
(d) 2
(e) 158.464
(f) terminate or repeat