MAT 060 (A) **Name** _____
Practice Exam – Fractions and Decimals **Date** _____
Instructor _____ **Campus** _____

All exam answers are to be in simplest form. A scientific calculator may be used.
No notes, no books, no homework may be used while taking this exam.
Use blank spaces on the exam to show work. Attach all scratch paper to the exam.

Write a fraction to represent the shaded area of the figure.

1) 

$\frac{4}{9}$ $\frac{\text{shaded}}{\text{Total}}$ $\frac{\text{part}}{\text{whole}}$

Write the fraction in simplest form.

2) Of the 154 students at a high school, 33 are sophomores. What fraction of the students are sophomores?

$\frac{33 \div 11}{154 \div 11} = \frac{3}{14}$ $\frac{\text{sophomores}}{\text{Total}}$

Write the fraction in simplest form. divide or cancel common factors

3) $\frac{30}{80} \frac{\div 10}{\div 10} = \frac{3}{8}$

4) $-\frac{247}{342} \frac{\div 19}{\div 19} = -\frac{13}{18}$

Determine whether the pair of fractions is equivalent.

5) $\frac{5}{8}$ and $\frac{40}{64}$ $\quad 320 \quad 320$ Yes, equivalent

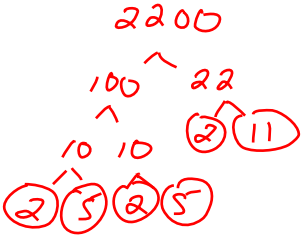
Logic of cross products to compare fractions

6) $\frac{4}{5}$ and $\frac{20}{70}$ $\quad 280 \quad 100$ not equivalent

Find the prime factorization of the number.

7) 126 $\quad 2 \cdot 3^2 \cdot 7$

8) 2200 $\quad 2^3 \cdot 5^2 \cdot 11$



Find the least common multiple (LCM) of the list of numbers.

9) 10, 45

LCM = 90

$\frac{10 \cdot 45}{5} = 90$

10 = 5 · 2

45 = 5 · 9 = 5 · 3 · 3

$5^1 \cdot 2^1 \cdot 3^2 = 90$

Write the fraction as an equivalent fraction with the given denominator.

10) $\frac{7}{11} = \frac{35}{55}$ (×5)

11) $\frac{2}{3} = \frac{18}{27}$ (×9)

Perform the indicated operation. Simplify your answers.

12) $\frac{3}{8} + \frac{3}{8} = \frac{6}{8} = \frac{3}{4}$ (÷2)

Like fractions so add numerator + reduce

13) $\frac{5}{21} - \frac{4}{21} = \frac{1}{21}$

14) $-\frac{8}{27} + \frac{8}{27} = \frac{-16}{27}$

15) $-\frac{1}{7} \cdot \frac{1}{5} = \frac{-1}{35}$

16) $-\frac{5}{8} \cdot -\frac{5}{6} = \frac{25}{48}$

Both negative so answer is positive

17) $\frac{2}{3} \cdot \frac{1}{8} \cdot \frac{7}{8} = \frac{7}{96}$ (2 → 1, 8 → 4)

18) $1\frac{5}{9} \cdot 6\frac{3}{7} = \frac{14}{9} \cdot \frac{45}{7} = \frac{10}{1} = 10$

change to improper and multiply

19) $\frac{43}{8} \div \frac{1}{8} = \frac{43}{8} \cdot \frac{8}{1} = \frac{43}{1}$

change to multiplying by the reciprocal.

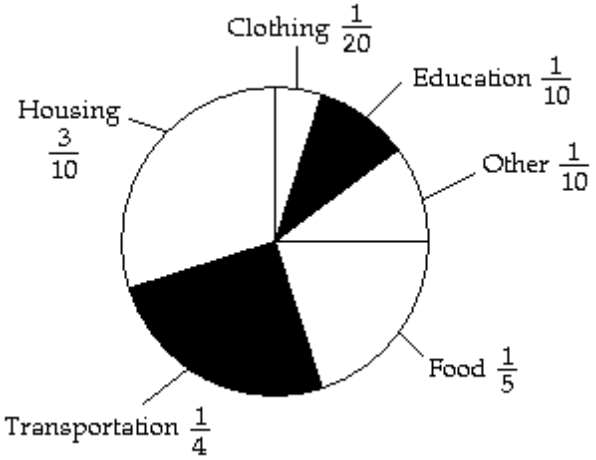
20) $32 \div \frac{4}{3} = \frac{32}{1} \cdot \frac{3}{4} = 24$

21) $2\frac{3}{5} \div \frac{1}{5} = \frac{13}{5} \cdot \frac{5}{1} = \frac{13}{1} = 13$

change to improper the multiply by the inverse

22) $-\frac{4}{15} \div -\frac{8}{15} = -\frac{4}{15} \cdot -\frac{15}{8} = \frac{1}{2}$

The circle graph below shows us how an average consumer spends money. Use this information to answer the question.



23) What fraction of spending goes for other and transportation combined?

other : $\frac{1}{10}$

Transportation : $\frac{1}{4}$

$\frac{1}{10} + \frac{1}{4} = \frac{4}{40} + \frac{10}{40} = \frac{14}{40} = \frac{7}{20}$

24) What fraction of spending goes for clothing, transportation, and food?

clothing : $\frac{1}{20}$

Transportation : $\frac{1}{4}$

Food : $\frac{1}{5}$

$\frac{1}{20} + \frac{1}{4} + \frac{1}{5}$

$\frac{1}{20} + \frac{5}{20} + \frac{4}{20} = \frac{10}{20} = \frac{1}{2}$

25) Suppose your family spent $54,000 on the items in the graph above. How much might we expect was spent on education?

Education: $\frac{1}{10}$ $\frac{1}{10} \cdot \frac{54000}{1} = 5400$ $5400 spent on education

Perform the indicated operations. Round the result to the nearest thousandth if necessary.

26) 97.14 + 96.97 + 27.29 = 221.40

Line up decimal and place values

$$\begin{array}{r} {}^{2}\,97.^{1}14 \\ 96.97 \\ 27.29 \\ \hline 221.40 \end{array}$$

27) −4.1 + 9.6 = 4.1 + 9.6 = 13.7

change to adding the opposite

Both negative so add + keep sign

28) 3.8 − 4.3 $3\,\overset{1}{4}.\overset{13}{3} - 3.8 = -.5$

signs are different so subtract & take the sign of the larger.

29) 64.5 × 5.6

$$\begin{array}{r} {}^{2}\,64.^{3}5 \\ 5.6 \\ \hline 3870 \\ 3225\,x \\ \hline 361.20 \end{array}$$

30) (−1.7) ÷ (−12.75)

$$12.75 \overline{)\,1.70000} \quad .13$$

1275

4250

−3825

425

31) Subtract 0.0467 from 73

$$\begin{array}{r} {}^{2}\,{}^{9}\,{}^{9}\,{}^{9}\,{}^{10} \\ 73.0000 \\ .0467 \\ \hline 72.9533 \end{array}$$

Line up decimals

Add zeros (72.9533)

Solve.

32) Find the total monthly cost of owning and maintaining a car given the information shown.

Monthly car payment:	$379.96
Monthly insurance cost:	$62.10
Average cost of gasoline per month:	$45.90
Average maintenance cost per month:	$18.50

$$\begin{array}{r} 379.96 \\ 62.10 \\ 45.90 \\ 18.50 \\ \hline \$506.46 \end{array}$$

33) Mr. Davis grosses $500 a week. If his take-home pay is $407.59, how much money was deducted from his gross weekly pay?

$$\begin{array}{r} 4\,9\,9\,{}^{10} \\ 500.00 \\ -407.59 \\ \hline \$92.41 \end{array}$$