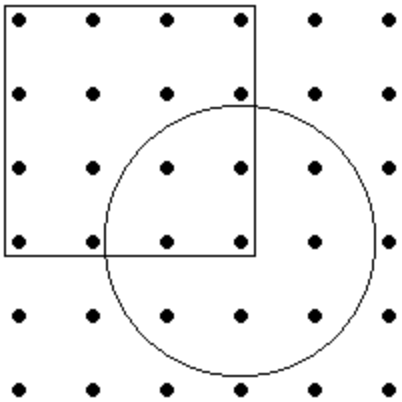
T102 CHAPTER 5 REVIEW

THIS IS ONLY A SAMPLING OF POSSIBLE EXAM QUESTIONS. BE SURE TO REVIEW ALL NOTES, ACTIVITIES, HOMEWORK, AND QUIZZES. **Revised: Fall 2007**

1) Refer to the figure below and represent the described amount as a ratio.



a. The all the dots to the dots in the square.
b. The dots not in the circle to the dots in the square.

2) Find two fractions between $\frac{3}{5}$ and $\frac{2}{3}$.

3) Solve each of the following for x. SHOW WORK.

a. $4^x = 32$ b. $3^x = 81$

Solve for x.

4) $\frac{104}{x} = -\frac{8}{9}$

Change to a mixed number:

5) $\frac{57}{13}$

Change to an improper fraction:

6) $-4\frac{3}{7}$

Solve the following problems. Express your answer in simplest form.
SHOW ALL WORK FOR FULL CREDIT. NO WORK = NO CREDIT.

7) Tim needs to apply $2\frac{1}{4}$ gallons of herbicide per acre of soybeans. How many gallons of herbicide are needed for 188 acres?

8) A recipe calls for $1\frac{3}{5}$ cups of pecans. The cook needs to triple the recipe. She has $4\frac{1}{2}$ cups of pecans in her pantry.
   a. Does she have enough?
   b. If so, how much is left over? If not, how much more does she need?

9) There were 28 yards of wire on a spool. One customer bought $6\frac{5}{8}$ yards of wire from the spool and another bought $1\frac{1}{2}$ yards. How many yards were left on the spool?

10) Anne writes 2 pages in $\frac{2}{3}$ of an hour. How many pages can she write in $3\frac{1}{3}$ hours?

11) Determine which is the better buy: $\$3.92$ for a package of 8 bars of soap or $\$4.29$ for a package of 11 bars of soap.

12) A car traveled 174 miles on $8\frac{2}{7}$ gallons of gas. How many miles per gallon did the car get?

SET UP A PROPORTION AND SOLVE.

Write each of the following rational numbers in simplest form.

13) $-\frac{42}{70}$

14) $\frac{0}{9}$

15) $\frac{x^2 - y^2}{3x + 3y}$

16) $\frac{180}{630}$

Insert >, <, or = between the following rational numbers.

17) $-\frac{2}{3}$ _____ $-\frac{5}{6}$

18) $1\frac{8}{3}$ _____ $3\frac{2}{3}$

19) $\frac{2}{9}$ _____ $\frac{1}{4}$

Arrange the following fractions at <u>appropriate intervals</u> on the following number line.

20) $\frac{4}{4}, -\frac{1}{4}, \frac{7}{4}, -\frac{8}{4}\ 0, -1\frac{1}{4}$

21) Approximate each of the following using $0, \frac{1}{4}, \frac{1}{3}, \frac{1}{2}, \frac{3}{4},$ or 1.

<u>Then tell if your estimate is LOW or HIGH.</u>

a. $\frac{49}{200}$ b. $\frac{1}{600}$ c. $\frac{97}{98}$

22) Find: $\frac{1}{5} \cdot \frac{3}{4}$ using an area model.

23) Find: $\frac{2}{3} \div \frac{1}{6}$ using an area model.

24) Find: $5 \cdot \frac{2}{3}$ using repeated addition.

Write the following in simplest form using positive exponents.

25) $\left(\frac{2}{7}\right)^5 \div \left(\frac{4}{49}\right)^2$

26) $y^2 \cdot y^{-3}$

27) $(4x^3y^0)^2$

28) In the fraction $\frac{i}{k}$, k is referred to as the ____ and i is referred to as the _____.

Estimate each of the following. <u>EXPLAIN YOUR THINKING IN WORDS</u>.
DO NOT PERFORM THE ACTUAL OPERATIONS!

29) a. $6\frac{1}{15} \cdot 2\frac{9}{10}$ b. $\frac{199}{198} + \frac{35}{17}$ c. $\frac{8\frac{1}{4}}{\frac{1}{4}}$

Perform the indicated operation(s). SHOW ALL WORK and express your answer in simplest form (using mixed numbers if possible).

30) a. $-\frac{1}{4}+\frac{3}{8}-\frac{1}{6}$

b. $14\frac{2}{8}-9\frac{3}{4}$ (use mixed numbers only)

c. $\frac{3}{5x}-\frac{1}{2y}$

d. $2\frac{2}{5} \div -2\frac{1}{4}$

e. $3\frac{2}{7}+1\frac{4}{5}$
(use mixed numbers only)

f. $\left(1\frac{1}{4}-3\frac{1}{8}\right) \div 8\frac{1}{2}$

g. $\frac{10}{12} \cdot \frac{-3}{5}-\left(\frac{1}{5} \div \frac{2}{10}\right)$

h. $3\frac{3}{8} \div 9$

31) For each of the following, find the additive and multiplicative inverse.

	Additive Inverse	Multiplicative Inverse
10		
$4\frac{6}{11}$		
$-\frac{4}{9}$		

Answer Key
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1) a. 36 to 16
   b. 27 to 16
2) $\frac{37}{60}$ and $\frac{38}{60}$ plus others with different denominators
3) a. $x = \frac{5}{2}$ b. $x = 4$
4) $x = -117$
5) $4\frac{5}{13}$
6) $-\frac{31}{7}$
7) 423 gallons
8) a. no
   b. $\frac{3}{10}$ cup(s)
9) $19\frac{7}{8}$ yards
10) 10 page(s)
11) 11 bars of soap for $4.29
12) 21 mpg
13) $-\frac{3}{5}$
14) 0
15) $\frac{x - y}{3}$
16) $\frac{2}{7}$
17) >
18) =
19) <
20)
21) a. $\frac{1}{4}$, high
   b. 0, low
   c. 1, high
22)
23)
24) $\frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} = \frac{10}{3} = 3\frac{1}{3}$
25) $\frac{2}{7}$
26) $\frac{1}{y}$
27) $16x^6$
28) a. denominator
   b. numerator
29) a. ≈18
   b. ≈3
   c. ≈33
30) a. $-\frac{1}{24}$
   b. $4\frac{1}{2}$
   c. $\frac{6y - 5x}{10xy}$
   d. $-1\frac{1}{15}$
   e. $5\frac{3}{35}$
   f. $-\frac{15}{68}$
   g. $-1\frac{1}{2}$
   h. $\frac{3}{8}$
31)

	Additive Inverse	Mult. Inverse
10	-10	$\frac{1}{10}$
$4\frac{6}{11}$	$-4\frac{6}{11}$	$\frac{11}{50}$
$-\frac{4}{9}$	$\frac{4}{9}$	$-\frac{9}{4}$