

Math 190
Spring 2012
Dr. Lily Yen

Test 3

Show all your work

Name: _____

Score: ____/56

Problem 1: Use diagrams to show why the following fractions are equivalent.

$$\frac{1}{3} = \frac{3}{9}$$

Score: /2

Problem 2: If you pour 15 litres of water into an empty tank, you only fill three quarters of the tank. What is the capacity of the tank? Use a diagram to represent the problem and solve it with your diagram.

Score: /2

Problem 3: Order the following numbers from smallest to biggest using the original numbers in your final answer.

$$35.7\%, \frac{8}{7}, 0.5, 2\frac{5}{6}, \frac{23}{9}, 1.\overline{35}$$

Score: /3

Problem 4: Find the answer to the following using any method.

a. Find two fifths of 300.

b. If 5 is one tenth of a number, what is three times the number?

c. If the difference between three sevenths of a number and one seventh of the same number is 14, find the number.

d. Express $\frac{13}{52}$ as a decimal.

e. Express $\frac{2}{7}$ as a percent exactly.

f. Compute $2\frac{3}{5} - 1\frac{11}{12}$.

g. Compute $3\frac{1}{7} + \frac{31}{4}$. Express your answer as a mixed fraction.

h. Simplify the following fraction to lowest terms.

$$\frac{2^3 \times 3^5 \times 7^3}{2^4 \times 3^2 \times 5 \times 7^2}$$

Score: /16

Problem 5: Draw diagrams to illustrate each of the following.

a. $\frac{2}{5} \times \frac{1}{3}$

b. $4\frac{1}{8} \div \frac{3}{4}$

c. $\frac{1}{2} + 3\frac{2}{3}$

Score: /6

Problem 6: Convert the decimal number to fraction: $31.0\overline{34}$.

Score: /3

Problem 7: For each Christmas present, Jane needs $\frac{3}{8}$ metres of ribbon. Jane wishes to wrap 15 presents, would 5 metres of ribbon be enough? If so, how much is left over? If not enough, how much short?

Score: /4

Problem 8: Ted can paint three fifths of a square wall with 1 litre of paint.

- a. How much of that same wall could he paint with 0.75 litre of paint?
- b. How many litres will Ted need to paint the entire wall?

Score: /4

Problem 9: Officials in Looneytown, Bugsville, and Marvelland make these observations: the Looneytown budget went up 25% to 25 million; the Bugsville budget went up 20% to 24 million; and the Marvelland budget went down 25% from 21 million. Which municipality had the largest budget last year?

Score: /4

Problem 10: Pete can type 80 words in the same time that Ralph can type 50 words. If they type that way for an extended period of time, when Ralph has typed 4000 words, how many words has Pete typed?

Score: /4

Problem 11: Abby, Belinda, and Cate want to rent a 3-bedroom apartment. Abby wants the corner bedroom, so she will pay 25% more of the rent than Belinda will. Cate wants the biggest bedroom and agrees to pay 50% more than Belinda. What share of the rent will each pay? Express your answer as ratios of whole numbers for Abby to Belinda to Cate.

Score: /4

Problem 12: A flock of Canada geese on Burnaby Lake were being observed continuously.

- At 1:00 p.m., $\frac{1}{5}$ of the geese flew away.
- At 2:00 p.m., $\frac{1}{8}$ of the geese that remained flew away.
- At 3:00 p.m., 3 times as many geese as had flown away at 1:00 p.m. flew away, leaving 28 geese on the lake. At no other time did any geese arrive, fly away, or die. How many geese were in the original flock?

Score: /4