

Math 135 – Practice Test 1

Practice Test
Instructor: Patricia Wrean

Name: Solution Set

No calculators are allowed for this test.

Total: 30 points

Part I: For these short-answer questions, you do not need to show any work. Place your final answer in the space provided. Each answer is worth one point.

1. (1 point) Simplify $\frac{18}{12}$.

$$\frac{18}{12} = \frac{\cancel{6} \times 3}{\cancel{6} \times 2} = \frac{3}{2}$$

$\frac{3}{2}$

2. (1 point) Write $\frac{32}{7}$ as a mixed number.

$$\begin{array}{r} 4 \\ 7 \overline{) 32} \\ \underline{28} \\ 4 \end{array}$$

$4 \frac{4}{7}$

3. (1 point) Write 48% as a fraction. Simplify your answer.

$$48\% = \frac{48}{100} = \frac{\cancel{4} \times 12}{\cancel{4} \times 25} = \frac{12}{25}$$

$\frac{12}{25}$

4. (2 points) Add, subtract, or multiply, as indicated. Simplify when possible.

(a) $\frac{5}{12} + \frac{7}{12} - \frac{1}{12} = \frac{11}{12}$

$\frac{11}{12}$

(b) $\frac{7}{18} \times 3 = \frac{\cancel{7}}{\cancel{6} \times \cancel{3}} \times \frac{\cancel{3}}{1} = \frac{7}{6}$

$\frac{7}{6}$

Part II: For these questions, show your work and write your final answer in the space provided.

5. (2 points) Simplify the following fraction.

$$\frac{144}{84}$$

$$\frac{12}{7}$$

Short version:

$$\frac{144}{84} = \frac{\cancel{12} \times 12}{\cancel{12} \times 7} = \frac{12}{7}$$

long version

$$\frac{144}{84} = \frac{\cancel{2} \times 72}{\cancel{2} \times 42} = \frac{\cancel{2} \times 36}{\cancel{2} \times 21} = \frac{\cancel{3} \times 12}{\cancel{3} \times 7} = \frac{12}{7}$$

6. (8 points) Add, subtract, or multiply as indicated. Simplify when possible.

(a) $3\frac{1}{5} - 1\frac{5}{6}$

$$= \frac{16}{5} - \frac{11}{6}$$

$$= \frac{16}{5} \left(\frac{6}{6}\right) - \frac{11}{6} \left(\frac{5}{5}\right)$$

$$= \frac{96}{30} - \frac{55}{30} = \frac{41}{30}$$

$$\frac{41}{30}$$

(3)

(or, if you insist,
 $1\frac{11}{30}$)

(b) $\frac{1}{21} + \frac{5}{14}$

$$= \frac{1}{21} \left(\frac{2}{2}\right) + \frac{5}{14} \left(\frac{3}{3}\right)$$

$$= \frac{2}{42} + \frac{15}{42}$$

$$= \frac{17}{42}$$

$$\frac{17}{42}$$

(2)

(c) $\frac{15}{24} \times \frac{8}{9}$

$$= \frac{\cancel{3} \times 5}{\cancel{3} \times \cancel{8}} \times \frac{\cancel{8}}{9} = \frac{5}{9}$$

$$\frac{5}{9}$$

(2)

(-1) not fully simplified

LCD
= 30

LCD:
21 = 3 × 7
14 = 2 × 7
so LCD = 2 × 3 × 7
= 42

7. (2 points) Multiply or divide as indicated. Simplify when possible.

$$2\frac{3}{8} \div 6 = \frac{19}{8} \times \frac{1}{6} = \frac{19}{48}$$

$$\frac{19}{48}$$

8. (2 points) What is 35% of 42?

$$\begin{array}{r} 42 \\ 0.35 \\ \hline 210 \\ 126 \\ \hline 14.70 \end{array}$$

$$14.7$$

(-1) incorrect decimal place

9. (5 points) Add, subtract, multiply, or divide as indicated. Leave your answer in decimal form. Do not round your answer.

(a) $72.36 + 108.88$

$$\begin{array}{r} 108.88 \\ + 72.36 \\ \hline 181.24 \end{array}$$

$$181.24$$

(2)

(b) $1.4484 \div 0.34 = \frac{1.4484}{0.34} \left(\frac{100}{100} \right) = \frac{144.84}{34}$

$$4.26$$

(3)

$$\begin{array}{r} 4.26 \\ 34 \overline{) 144.84} \\ \underline{136} \\ 88 \\ \underline{68} \\ 204 \\ \underline{204} \\ 0 \end{array}$$

(-1) incorrect decimal place

10. (2 points) Sara must find the area of her flower garden so that she can determine how much fertilizer to purchase. What is the area of her rectangular garden, which measures 15 feet long and $10\frac{1}{5}$ feet wide? Write a concluding sentence for your answer.

$$15 \times 10\frac{1}{5} = \frac{15}{1} \times \frac{51}{5} = \frac{3 \times \cancel{8}}{1} \times \frac{51}{\cancel{5}} = 153$$

The area of Sara's garden is 153 square feet.

↑
 $(-\frac{1}{2})$ if no units

11. (4 points) Morgan has $19\frac{1}{2}$ metres of fleece material. For the questions below, write a concluding sentence for your answer.

- (a) A fleece pullover requires $1\frac{5}{8}$ metres of material. How many fleece pullovers can Morgan make from the material he has?

$$19\frac{1}{2} \div 1\frac{5}{8} = \frac{39}{2} \div \frac{13}{8} = \frac{39}{2} \times \frac{8}{13} = \frac{\cancel{13} \times 3}{2} \times \frac{4 \times \cancel{2}}{\cancel{13}} = 12$$

Morgan can make 12 fleece pullovers.

- (b) If the material is \$12.50 per metre, how much did Morgan have to pay for the fleece material?

$$19\frac{1}{2} \times 12.5 = 19.5 \times 12.5$$

$$\begin{array}{r} 19.5 \\ 12.5 \\ \hline 975 \\ 390 \\ 195 \\ \hline 243.75 \end{array}$$

Morgan paid \$243.75.

↑
 $(-\frac{1}{2})$ if no units

[- you could also multiply $19\frac{1}{2} \times 12\frac{1}{2} = \frac{39}{2} \times \frac{25}{2} = \frac{975}{4} = 243\frac{3}{4} = 243.75$]