

Math 10 – Exam 2

Name Key

For each problem, perform the operation or answer the question, showing work for possible partial credit. Fraction answers should be reduced where possible, unless otherwise stated.

<p>1. Subtract: $4\frac{5}{8} + 6\frac{1}{2}$ Add:</p> $4\frac{5}{8} \rightarrow 4\frac{5}{8}$ $6\frac{1}{2} \rightarrow + 6\frac{4}{8}$ <hr style="width: 20%; margin-left: auto; margin-right: auto;"/> $10\frac{9}{8}$ $10 + 1\frac{1}{8} = 11\frac{1}{8}$	<p>2. Simplify $\left(1\frac{1}{3}\right)^2 \cdot 18$</p> $\left(\frac{4}{3}\right)^2 \cdot 18$ $= \frac{16}{9} \cdot 18^2$ $= 32$
<p>3. Round 89.2361 to the nearest:</p> <p>a) hundredth 89.24</p> <p>b) tenth 89.2</p> <p>c) ten 90</p>	<p>4. Simplify: $2.8 + 7 + 0.714$</p> $\begin{array}{r} 2.8 \\ 7. \\ + 0.714 \\ \hline 10.514 \end{array}$
<p>5. Simplify: $9 - 4.651$</p> $\begin{array}{r} 8 \\ 9.000 \\ - 4.651 \\ \hline 4.349 \end{array}$	<p>6. Round each number to the nearest whole number and perform the operations to estimate the result:</p> $8\frac{27}{29} + 5\frac{3}{13} - 2\frac{7}{8}$ $\approx 9 + 5 - 3 = 14 - 3$ $= 11$

7. Solve: $0.6x = 0.27$

$$\frac{0.16}{\cancel{0.16}} \frac{\cancel{6}}{\cancel{6}} = \frac{2.7}{7}$$

$$6 \overline{) 2.70}$$

$$\begin{array}{r} 0.45 \\ -24 \\ \hline 30 \\ 30 \\ \hline 0 \end{array} = 0.45$$

8. Simplify: 0.4×4.85

$$\begin{array}{r} 3 \\ 4.85 \\ 14 \\ \hline 1940 \end{array}$$

1.940 or 1.94

9. Gas costs \$2.59/gallon, and 11.396 gallons are bought.

a) Write an estimate of each number

$$\sim 3 \qquad \sim 11$$

$$\text{or } \sim 2.6 \qquad \text{or } \sim 10$$

b) Find the product of the estimates to give an estimate of the total cost.

Several estimates:

$$3 \times 11 = 33 \qquad 2.6 \times 10 = 26$$

$$3 \times 10 = 30$$

10. If one bag of chips costs \$3.29, and 4 bags are bought, how much is spent?

$$\begin{array}{r} 3.29 \\ 4 \\ \hline 13.16 \end{array}$$

\$13.16

11. A college has 9000 students and 400 faculty. Find the student to faculty ratio, and write as a unit ratio.

$$\frac{\text{students}}{\text{faculty}} = \frac{9000}{400} = \frac{90}{4} = \frac{45}{2}$$

unit ratio: $\frac{22.5}{1}$

one in denominator

12. A car travels 500 miles on 16 gallons of gas. Write this as a unit rate, to the nearest cent. ~~ten~~ *ten*

$$\frac{500}{16} = 31.3 \text{ (per gal)}$$

$$\begin{array}{r} 31.25 \\ 16 \overline{) 500} \\ \underline{48} \\ 20 \\ \underline{16} \\ 40 \\ \underline{32} \\ 80 \end{array}$$

13. Write 9.7% as

a) a decimal

.097

b) a fraction

$$\frac{9.7}{100}$$

$$= \frac{97}{10000}$$

14. Round 17.17 to the nearest

a) thousandth

17.172

b) hundredth

17.17

17.17

$$\begin{array}{r} 22.5 \\ 2 \overline{) 45.0} \\ \underline{4} \\ 4 \\ \underline{4} \\ 0 \end{array}$$

15. Solve the proportion: $\frac{25}{4} = \frac{15}{x}$

$$\frac{25x}{25} = \frac{60 \div 5}{25 \div 5} = \frac{12}{5}$$

$$x = \frac{12}{5} \text{ or } 2.4$$

16. If 8 inches on a map represents a distance of 150 miles, how many miles are represented by 10 inches?

$$\begin{array}{l} \text{in} \quad 8 \\ \text{miles} \quad 150 \end{array} = \frac{10}{x}$$

$$8x = (150)(10)$$

$$\frac{8x}{8} = \frac{1500}{8}$$

8

$$x = 187.5 \text{ miles}$$

$$\begin{array}{r} 187.5 \\ 8 \overline{)1500} \\ \underline{8} \\ 70 \\ \underline{64} \\ 60 \\ \underline{56} \\ 40 \end{array}$$

17. Convert $\frac{7}{20}$ to:

a) a decimal

b) a percent

$$\begin{array}{r} 0.35 \\ 20 \overline{)7.00} \\ \underline{60} \\ 100 \end{array}$$

$$= .35$$

$$\begin{aligned} .35 \times 100\% \\ = 35\% \end{aligned}$$

18. What is 47% of 60?

$$x = .47 \cdot 60$$

$$.47 = 28.2$$

$$.47$$

$$\frac{60}{}$$

$$\underline{2820}$$

19. Convert 290% to:

a) A decimal

$$2.9$$

b) A fraction

$$\frac{290}{10} = \frac{29}{10}$$

20. The price of a pair of shoes is discounted from \$60 to \$45.

a) What is the amount of decrease?

$$\$60 - 45 = 15$$

b) What is the percent decrease?

$$P = \frac{15}{60} = \frac{1}{4} = .25$$

$$= 25\%$$

