

Grade 9 Transitional Math

# Exam Review

(in order of units studied)



Key

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Sorry about the graphic... I couldn't resist!

# **Unit 1**

## **Mental Math and Order of Operations**

# Intro Unit – Multiplication Quiz

Find each product.

$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 1 \\ \times 4 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 6 \\ \times 7 \\ \hline 42 \end{array}$$

$$\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 4 \\ \times 1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 1 \\ \times 7 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 7 \\ \times 1 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 1 \\ \times 2 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 4 \\ \times 5 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 2 \\ \times 7 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 2 \\ \times 1 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 2 \\ \times 4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 1 \\ \times 6 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 7 \\ \times 4 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 7 \\ \times 6 \\ \hline 42 \end{array}$$

$$\begin{array}{r} 1 \\ \times 5 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 5 \\ \times 4 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 1 \\ \times 3 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 3 \\ \times 7 \\ \hline 21 \end{array}$$

Write the Correct Comparison Symbol ( >, < or = ) in Each Box

1) -21 > -78

11) -87 < -45

*closer to 0*

2) -29 > -30

12) 46 < 96

3) -46 < -39

13) 56 < 61

4) 38 < 55

14) -10 > -52

### Order of Operations

1)  $(9 - 3) + 16 \div 8$

$$\begin{array}{c} \vee \qquad \vee \\ 6 + 2 \\ \underline{\quad} \\ 8 \end{array}$$

6)  $(14 - 3) + 8 \div 2$

$$\begin{array}{c} 11 + 4 \\ \underline{\quad} \\ 15 \end{array}$$

2)  $(15 + 35 - 2) \div 16$

$$\begin{array}{c} 48 \div 16 \\ \underline{\quad} \\ = 3 \end{array}$$

7)  $2 \times 12 \times (4 - 4)$

$$\begin{array}{c} 2 \times 12 \times 0 \\ \underline{\quad} \\ = 0 \end{array}$$

3)  $8 \times 13 \times (4 + 3)$  *tush.*

$$\begin{array}{c} 8 \times 13 \times 7 \\ \underline{\quad} \\ 728 \end{array}$$

8)  $(10 + 38) \div (9 - 5)$  *Nice -*

$$\begin{array}{c} 48 \div 4 \\ \underline{\quad} \\ 12 \end{array}$$



## Adding Integers (A)

Use an integer strategy to find each answer.

$$1 + 4 = 5$$

$$6 + (-7) = -1$$
$$6 - 7$$

$$7 + (-7) = 0$$
$$7 - 7$$

$$5 + 2 = 7$$

$$5 + (-7) = -2$$
$$5 - 7$$

$$(-2) + 3 = 1$$
$$-2 + 3$$

$$(-2) + 6 = 4$$

$$5 + (-9) = -4$$
$$5 - 9$$

$$8 + (-2) = 6$$
$$8 - 2$$

$$(-3) + 7 = 4$$

$$6 + 5 = 11$$

$$3 + (-1) = 2$$
$$3 - 1$$

$$(-1) + 9 = 8$$

$$(-4) + (-5) = -9$$
$$-4 - 5$$

$$(-2) + (-2) = -4$$
$$-2 - 2$$

## Subtracting Integers (A)

Use an integer strategy to find each answer.

$$(-7) - (-5) =$$
$$-7 + 5 = -2$$

$$8 - (-5) = 13$$
$$8 + 5$$

$$4 - 9 = -5$$

$$(-1) - 2 = -3$$

$$2 - 5 = -3$$

$$5 - (-2) = 7$$
$$5 + 2$$

$$1 - 6 = -5$$

$$1 - (-2) = 3$$
$$1 + 2$$

$$(-8) - 4 = -12$$

$$9 - 1 = 8$$

$$(-3) - 5 = -8$$

$$(-8) - 5 = -13$$

$$(-5) - (-4) = -1$$
$$-5 + 4$$

$$(-3) - 6 = -9$$

$$(-4) - 4 = -8$$

## 2-Digit by 1-Digit Multiplication (B)

Multiply to determine each product.

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
| $\begin{array}{r} 7 \\ 49 \\ \times 8 \\ \hline 392 \end{array}$ | $\begin{array}{r} 79 \\ \times 6 \\ \hline 474 \end{array}$ | $\begin{array}{r} 47 \\ \times 3 \\ \hline 141 \end{array}$ | $\begin{array}{r} 17 \\ \times 8 \\ \hline 136 \end{array}$ | $\begin{array}{r} 31 \\ \times 8 \\ \hline 248 \end{array}$ | $\begin{array}{r} 90 \\ \times 3 \\ \hline 270 \end{array}$ | $\begin{array}{r} 17 \\ \times 7 \\ \hline 119 \end{array}$ | $\begin{array}{r} 96 \\ \times 5 \\ \hline 480 \end{array}$ |
|--|---|---|---|---|---|---|---|

|   |   |   |  |   |  |   |   |
|---|---|---|--|---|--|---|---|
| $\begin{array}{r} 87 \\ \times 2 \\ \hline 174 \end{array}$ | $\begin{array}{r} 39 \\ \times 5 \\ \hline 195 \end{array}$ | $\begin{array}{r} 80 \\ \times 4 \\ \hline 320 \end{array}$ | $\begin{array}{r} 17 \\ \times 5 \\ \hline 85 \end{array}$ | $\begin{array}{r} 97 \\ \times 9 \\ \hline 873 \end{array}$ | $\begin{array}{r} 19 \\ \times 4 \\ \hline 76 \end{array}$ | $\begin{array}{r} 43 \\ \times 3 \\ \hline 129 \end{array}$ | $\begin{array}{r} 79 \\ \times 4 \\ \hline 316 \end{array}$ |
|---|---|---|--|---|--|---|---|

## 2-Digit Multiplication (A)

Multiply to determine each product.

*No  
CALC!*

*makes me faster  
at times tables*

|  |  |  |  |  |   |
|--|--|--|--|--|---|
| $\begin{array}{r} 61 \\ \times 95 \\ \hline 305 \\ 549 \\ \hline 5795 \end{array}$ | $\begin{array}{r} 49 \\ \times 46 \\ \hline 294 \\ 196 \\ \hline 2254 \end{array}$ | $\begin{array}{r} 14 \\ \times 25 \\ \hline 70 \\ 28 \\ \hline 350 \end{array}$    | $\begin{array}{r} 21 \\ \times 29 \\ \hline 189 \\ 42 \\ \hline 609 \end{array}$   | $\begin{array}{r} 23 \\ \times 28 \\ \hline 184 \\ 46 \\ \hline 644 \end{array}$   | $\begin{array}{r} 24 \\ \times 83 \\ \hline 72 \\ 192 \\ \hline 1992 \end{array}$ |
| $\begin{array}{r} 88 \\ \times 63 \\ \hline 264 \\ 528 \\ \hline 5544 \end{array}$ | $\begin{array}{r} 63 \\ \times 72 \\ \hline 126 \\ 441 \\ \hline 4536 \end{array}$ | $\begin{array}{r} 45 \\ \times 58 \\ \hline 360 \\ 225 \\ \hline 2610 \end{array}$ | $\begin{array}{r} 62 \\ \times 55 \\ \hline 310 \\ 310 \\ \hline 3410 \end{array}$ | $\begin{array}{r} 40 \\ \times 93 \\ \hline 120 \\ 360 \\ \hline 3720 \end{array}$ | $\begin{array}{r} 49 \\ \times 82 \\ \hline 98 \\ 392 \\ \hline 4018 \end{array}$ |

# Unit 2

## Fraction Operations

## Simplify Fractions (A)

Simplify each fraction to its lowest terms.

$$\frac{9}{18} = \frac{1}{2}$$

$$\frac{4}{16} = \frac{1}{4}$$

$$\frac{18}{36} = \frac{1}{2}$$

$$\frac{20}{40} = \frac{1}{2}$$

$$\frac{70}{80} = \frac{7}{8}$$

$$\frac{18}{24} = \frac{3}{4}$$

$$\frac{5}{40} = \frac{1}{8}$$

$$\frac{21}{36} = \frac{7}{12}$$

$$\frac{6}{9} = \frac{2}{3}$$

$$\frac{21}{56} = \frac{3}{8}$$

$$\frac{9}{36} = \frac{1}{4}$$

$$\frac{9}{45} = \frac{1}{5}$$

$$\frac{6}{42} = \frac{1}{7}$$

$$\frac{14}{35} = \frac{2}{5}$$

$$\frac{24}{36} = \frac{4}{6} = \frac{2}{3}$$

$$\frac{10}{12} = \frac{5}{6}$$

## Comparing Fractions (A)

Compare each pair of fractions using a  $<$ ,  $>$  or  $=$  sign.

$$\frac{29}{8} > \frac{3}{6}$$

$$\frac{1}{3} < \frac{4}{10}$$

$$\frac{1}{4} < \frac{17}{5}$$

$$\frac{33}{5} > \frac{2}{4}$$

$$\frac{27}{10} < \frac{14}{2}$$

$$\frac{21}{3} > \frac{5}{5}$$

$$\frac{2}{6} < \frac{27}{4}$$

$$\frac{19}{6} > \frac{1}{12}$$

$$\frac{21}{6} > \frac{22}{10}$$

$$\frac{7}{9} < \frac{14}{5}$$

$$\frac{25}{12} > \frac{8}{5}$$

$$\frac{12}{4} > \frac{4}{12}$$

$$\frac{22}{10} > \frac{1}{3}$$

$$\frac{18}{8} > \frac{1}{3}$$

$$\frac{17}{8} < \frac{9}{2}$$

$$\frac{34}{12} > \frac{1}{2}$$

## Multiplying Fractions (J)

Find the value of each expression.

$$1. \frac{2}{3} \times \frac{7}{9} = \frac{14}{27}$$

*simplify if possible*

$$5. \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

$$9. \frac{1}{5} \times \frac{1}{6} = \frac{1}{30}$$

$$2. \frac{1}{3} \times \frac{2}{3} = \frac{2}{9}$$

$$6. \frac{5}{6} \times \frac{1}{2} = \frac{5}{12}$$

$$10. \frac{7}{9} \times \frac{1}{4} = \frac{7}{36}$$

## Dividing Fractions (J)

Find the value of each expression in lowest terms.

$$1. \frac{1}{10} \div \frac{5}{7}$$

$$\frac{1}{10} \times \frac{7}{5} = \frac{7}{50}$$

$$5. \frac{7}{9} \div \frac{6}{7}$$

$$\frac{7}{9} \times \frac{7}{6} = \frac{49}{54}$$

$$9. \frac{2}{9} \div \frac{1}{2}$$

$$\frac{2}{9} \times \frac{2}{1} = \frac{4}{9}$$

$$2. \frac{5}{8} \div \frac{4}{5}$$

$$\frac{5}{8} \times \frac{5}{4} = \frac{25}{32}$$

$$6. \frac{4}{9} \div \frac{1}{2}$$

$$\frac{4}{9} \times \frac{2}{1} = \frac{8}{9}$$

$$10. \frac{3}{4} \div \frac{8}{9}$$

$$\frac{3}{4} \times \frac{9}{8} = \frac{27}{32}$$

## Adding Fractions (J)

Find the value of each expression in lowest terms.

$$1. \frac{2}{15} + \frac{7}{15} = \frac{9}{15} = \frac{3}{5} \quad 5. \frac{13}{15} + \frac{2}{15} = \frac{15}{15} = 1 \quad 9. \frac{3}{5} + \frac{1}{5} = \frac{4}{5}$$

$$2. \frac{4}{19} + \frac{13}{19} = \frac{17}{19}$$

$$6. \frac{3}{5} + \frac{1}{5} = \frac{4}{5}$$

$$10. \frac{1}{16} + \frac{5}{16} = \frac{6}{16} = \frac{3}{8}$$

## Adding Fractions (J)

Find the value of each expression in lowest terms.

$$\frac{5}{5} 1. \frac{5}{9} + \frac{2}{5} = \frac{9}{9}$$

$$5. \frac{5}{9} + \frac{2}{8} = \frac{40}{72} + \frac{18}{72} = \frac{58}{72} = \frac{29}{36}$$

$$9. \frac{4}{13} + \frac{3}{5} = \frac{20}{65} + \frac{39}{65} = \frac{59}{65}$$

$$\frac{25}{45} + \frac{18}{45} = \frac{43}{45}$$

## Subtracting Fractions (J)

Find the value of each expression in lowest terms.

$$1. \frac{13}{16} - \frac{1}{5} = \frac{65}{80} - \frac{16}{80}$$

$$= \frac{49}{80}$$

$$5. \frac{1}{2} - \frac{2}{7} = \frac{7}{14} - \frac{4}{14} = \frac{3}{14}$$

$$9. \frac{5}{6} - \frac{11}{16}$$

$$\frac{80}{96} - \frac{66}{96} = \frac{14}{96} = \frac{7}{48}$$



### Adding Fractions

$$1) \frac{2}{5} + \frac{5}{10} = \frac{4}{10} + \frac{5}{10} = \frac{9}{10}$$

$$2) \frac{5}{5} \cdot \frac{1}{2} + \frac{2}{5} \cdot \frac{2}{2} = \frac{5}{10} + \frac{4}{10} = \frac{9}{10}$$

$$3) \frac{3}{3} \cdot \frac{7}{10} + \frac{2}{3} \cdot \frac{10}{10} = \frac{21}{30} + \frac{20}{30} = \frac{41}{30} = 1 \frac{11}{30}$$

$$4) \frac{1}{4} + \frac{1}{2} = \frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

$$5) \frac{1}{2} + \frac{8}{10} = \frac{5}{10} + \frac{8}{10} = \frac{13}{10} = 1 \frac{3}{10}$$

$$6) \frac{4}{5} + \frac{2}{4} = \frac{16}{20} + \frac{10}{20} = \frac{26}{20} = 1 \frac{6}{20} = 1 \frac{3}{10}$$

### Adding Fractions

$$1) \frac{5}{10} + \frac{1}{2} + \frac{1}{4} = \frac{10}{20} + \frac{10}{20} + \frac{5}{20} = \frac{25}{20} = 1 \frac{5}{20} = 1 \frac{1}{4}$$

$$2) \frac{1}{2} + \frac{1}{3} + \frac{2}{5} = \frac{15}{30} + \frac{10}{30} + \frac{12}{30} = \frac{37}{30} = 1 \frac{7}{30}$$

$$3) \frac{1}{2} + \frac{1}{3} + \frac{7}{10} = \frac{15}{30} + \frac{10}{30} + \frac{21}{30} = \frac{46}{30} = 1 \frac{16}{30} = 1 \frac{8}{15}$$

$$4) \frac{3}{4} + \frac{1}{2} + \frac{1}{5} = \frac{15}{20} + \frac{10}{20} + \frac{4}{20} = \frac{29}{20} = 1 \frac{9}{20}$$

# Unit 3

**Money, Decimals, Percents**



## Decimal Subtraction (J)

Find each difference.

$$\begin{array}{r} 5.05 \\ -3.31 \\ \hline 1.74 \end{array}$$

$$\begin{array}{r} 5.07 \\ -2.73 \\ \hline 2.34 \end{array}$$

$$\begin{array}{r} 3.42 \\ -1.91 \\ \hline 1.51 \end{array}$$

$$\begin{array}{r} 7.11 \\ -4.89 \\ \hline 2.22 \end{array}$$

$$\begin{array}{r} 9.97 \\ -3.23 \\ \hline 6.74 \end{array}$$

$$\begin{array}{r} 3.44 \\ -3.35 \\ \hline 0.09 \end{array}$$

$$\begin{array}{r} 1.54 \\ -1.31 \\ \hline 0.23 \end{array}$$

$$\begin{array}{r} 9.87 \\ -2.98 \\ \hline 6.89 \end{array}$$

$$\begin{array}{r} 8.44 \\ -6.75 \\ \hline 1.69 \end{array}$$

$$\begin{array}{r} 6.86 \\ -5.22 \\ \hline 1.64 \end{array}$$

$$\begin{array}{r} 6.54 \\ -4.23 \\ \hline 2.31 \end{array}$$

$$\begin{array}{r} 9.75 \\ -1.72 \\ \hline 8.03 \end{array}$$

$$\begin{array}{r} 2.81 \\ -2.55 \\ \hline 0.26 \end{array}$$

$$\begin{array}{r} 5.34 \\ -2.44 \\ \hline 2.90 \end{array}$$

$$\begin{array}{r} 6.63 \\ -2.19 \\ \hline 4.44 \end{array}$$

## Decimal Addition (J)

Find each sum.

$$\begin{array}{r} 17.1 \\ + 94.1 \\ \hline 111.2 \end{array}$$

$$\begin{array}{r} 12.2 \\ +10.7 \\ \hline 22.9 \end{array}$$

$$\begin{array}{r} 40.3 \\ + 61.2 \\ \hline 101.5 \end{array}$$

$$\begin{array}{r} 14.6 \\ +69.3 \\ \hline 83.9 \end{array}$$

$$\begin{array}{r} 85.7 \\ + 95.9 \\ \hline 181.6 \end{array}$$

$$\begin{array}{r} 63.5 \\ + 42.8 \\ \hline 106.3 \end{array}$$

$$\begin{array}{r} 42.8 \\ +32.4 \\ \hline 75.2 \end{array}$$

$$\begin{array}{r} 13.8 \\ +67.1 \\ \hline 80.9 \end{array}$$

$$\begin{array}{r} 92.3 \\ + 54.5 \\ \hline 146.8 \end{array}$$

$$\begin{array}{r} 92.5 \\ + 16.8 \\ \hline 109.3 \end{array}$$

$$\begin{array}{r} 60.3 \\ + 83.6 \\ \hline 143.9 \end{array}$$

$$\begin{array}{r} 37.3 \\ + 83.2 \\ \hline 120.5 \end{array}$$

$$\begin{array}{r} 21.3 \\ + 81.6 \\ \hline 102.9 \end{array}$$

$$\begin{array}{r} 54.4 \\ +21.8 \\ \hline 76.2 \end{array}$$

$$\begin{array}{r} 19.1 \\ +25.2 \\ \hline 44.3 \end{array}$$

## Multiplying Decimals (J)

Find each product.

$$\begin{array}{r} 4.9 \\ \times 0.92 \\ \hline 98 \\ 441 \\ \hline 4.508 \end{array}$$

$$\begin{array}{r} 8.9 \\ \times 0.92 \\ \hline 178 \\ 801 \\ \hline 8.188 \end{array}$$

$$\begin{array}{r} 2.8 \\ \times 0.79 \\ \hline 252 \\ 196 \\ \hline 2.212 \end{array}$$

$$\begin{array}{r} 9.5 \\ \times 0.25 \\ \hline 475 \\ 190 \\ \hline 2.375 \end{array}$$

$$\begin{array}{r} 3.6 \\ \times 0.91 \\ \hline 36 \\ 324 \\ \hline 3.276 \end{array}$$

$$\begin{array}{r} 4.2 \\ \times 0.71 \\ \hline 42 \\ 294 \\ \hline 2.982 \end{array}$$

$$\begin{array}{r} 6.6 \\ \times 0.27 \\ \hline 462 \\ 132 \\ \hline 1.782 \end{array}$$

$$\begin{array}{r} 7.6 \\ \times 0.24 \\ \hline 304 \\ 152 \\ \hline 1.824 \end{array}$$

## Decimal Multiplication (J)

Find each product.

$$\begin{array}{r} 8.7 \\ \times 9.4 \\ \hline 348 \\ 783 \\ \hline 81.78 \end{array}$$

$$\begin{array}{r} 3.5 \\ \times 6.9 \\ \hline 315 \\ 210 \\ \hline 24.15 \end{array}$$

$$\begin{array}{r} 8.7 \\ \times 9.1 \\ \hline 87 \\ 783 \\ \hline 79.17 \end{array}$$

$$\begin{array}{r} 3.2 \\ \times 2.5 \\ \hline 160 \\ 64 \\ \hline 8.00 \end{array}$$

$$\begin{array}{r} 8.4 \\ \times 6.7 \\ \hline 588 \\ 504 \\ \hline 56.28 \end{array}$$

$$\begin{array}{r} 2.4 \\ \times 2.3 \\ \hline 72 \\ 48 \\ \hline 5.52 \end{array}$$

$$\begin{array}{r} 3.2 \\ \times 7.2 \\ \hline 64 \\ 224 \\ \hline 23.04 \end{array}$$

$$\begin{array}{r} 2.4 \\ \times 3.3 \\ \hline 72 \\ 72 \\ \hline 7.92 \end{array}$$

$$\begin{array}{r} 2.3 \\ \times 4.8 \\ \hline 184 \\ 92 \\ \hline 11.04 \end{array}$$

$$\begin{array}{r} 5.3 \\ \times 2.8 \\ \hline 424 \\ 106 \\ \hline 14.84 \end{array}$$

## Rounding Decimals to Whole Numbers (J)

Round the decimal numbers below to the nearest whole number.

|       |           |       |           |       |           |       |           |
|-------|-----------|-------|-----------|-------|-----------|-------|-----------|
| 43.48 | <u>43</u> | 81.16 | <u>81</u> | 49.12 | <u>49</u> | 18.35 | <u>18</u> |
| 96.41 | <u>96</u> | 4.01  | <u>4</u>  | 90.75 | <u>91</u> | 61.23 | <u>61</u> |
| 66.33 | <u>66</u> | 53.82 | <u>54</u> | 58.2  | <u>58</u> | 43.54 | <u>44</u> |
| 55.97 | <u>56</u> | 95.98 | <u>96</u> | 29.5  | <u>30</u> | 39.67 | <u>40</u> |
| 82.35 | <u>82</u> | 4.83  | <u>5</u>  | 92.55 | <u>93</u> | 44.33 | <u>44</u> |
| 86.75 | <u>87</u> | 92.01 | <u>92</u> | 29.19 | <u>29</u> | 34.53 | <u>35</u> |
| 64.52 | <u>65</u> | 80.24 | <u>80</u> | 22.07 | <u>22</u> | 51.3  | <u>51</u> |

## Comparing Percents of Numbers (J)

What is greater? Use  $<$ ,  $>$ , or  $=$  for each pair. *Use calculator.*

$$68\% \text{ of } 17 \quad < \quad 25\% \text{ of } 65$$

$$.68 \times 17 = 11.56 \quad 25\% \times 65 = 16.25$$

$$47\% \text{ of } 52 \quad \underline{\hspace{1cm}} \quad 40\% \text{ of } 36$$

$$24.44 \quad > \quad 14.4$$

$$23\% \text{ of } 41 \quad \underline{\hspace{1cm}} \quad 82\% \text{ of } 22$$

$$9.43 \quad < \quad 18.04$$

$$3\% \text{ of } 54 \quad \underline{\hspace{1cm}} \quad 4\% \text{ of } 19$$

$$1.62 \quad > \quad .76$$

$$1\% \text{ of } 79 \quad \underline{\hspace{1cm}} \quad 4\% \text{ of } 89$$

$$.79 \quad < \quad 3.56$$

$$89\% \text{ of } 75 \quad \underline{\hspace{1cm}} \quad 25\% \text{ of } 98$$

$$66.75 \quad > \quad 24.5$$

$$45\% \text{ of } 55 \quad \underline{\hspace{1cm}} \quad 67\% \text{ of } 82$$

$$24.75 \quad < \quad 54.94$$

$$6\% \text{ of } 9 \quad \underline{\hspace{1cm}} \quad 79\% \text{ of } 80$$

$$.54 \quad < \quad 63.2$$

$$38\% \text{ of } 34 \quad \underline{\hspace{1cm}} \quad 35\% \text{ of } 28$$

$$12.92 \quad > \quad 9.8$$

$$21\% \text{ of } 86 \quad \underline{\hspace{1cm}} \quad 39\% \text{ of } 48$$

$$-11 - 18.06 \quad < \quad 18.72$$

## Rounding Decimals to Tenths (A)

Round the decimal numbers below to the nearest tenth.

|      |            |      |            |      |            |      |            |
|------|------------|------|------------|------|------------|------|------------|
| 3.73 | <u>3.7</u> | 0.77 | <u>0.8</u> | 2.5  | <u>2.5</u> | 9.17 | <u>9.2</u> |
| 7.25 | <u>7.3</u> | 2.48 | <u>2.5</u> | 1.97 | <u>2.0</u> | 2.42 | <u>2.4</u> |
| 6.09 | <u>6.1</u> | 9.74 | <u>9.7</u> | 0.71 | <u>0.7</u> | 9.13 | <u>9.1</u> |
| 3.48 | <u>3.5</u> | 5.85 | <u>5.9</u> | 4.64 | <u>4.6</u> | 9.18 | <u>9.2</u> |
| 1.98 | <u>2.0</u> | 1.97 | <u>2.0</u> | 8.96 | <u>9.0</u> | 5.92 | <u>5.9</u> |
| 9.59 | <u>9.6</u> | 4.73 | <u>4.7</u> | 6.54 | <u>6.5</u> | 7.35 | <u>7.4</u> |
| 7.64 | <u>7.6</u> | 9.19 | <u>9.2</u> | 0.44 | <u>0.4</u> | 4.61 | <u>4.6</u> |

## Rounding Decimals to Hundredths (E)

Round the decimal numbers below to the nearest hundredth.

|       |             |       |             |       |             |       |             |
|-------|-------------|-------|-------------|-------|-------------|-------|-------------|
| 5.755 | <u>5.76</u> | 1.033 | <u>1.03</u> | 1.463 | <u>1.46</u> | 6.571 | <u>6.57</u> |
| 1.479 | <u>1.48</u> | 2.772 | <u>2.77</u> | 5.709 | <u>5.71</u> | 6.871 | <u>6.87</u> |
| 7.189 | <u>7.19</u> | 8.639 | <u>8.64</u> | 0.604 | <u>0.60</u> | 0.178 | <u>0.18</u> |
| 6.831 | <u>6.83</u> | 0.427 | <u>0.43</u> | 4.922 | <u>4.92</u> | 2.729 | <u>2.73</u> |
| 8.997 | <u>9.00</u> | 5.422 | <u>5.42</u> | 2.586 | <u>2.59</u> | 0.407 | <u>0.41</u> |
| 8.121 | <u>8.12</u> | 9.098 | <u>9.10</u> | 5.849 | <u>5.85</u> | 5.413 | <u>5.41</u> |
| 5.684 | <u>5.68</u> | 7.744 | <u>7.74</u> | 8.668 | <u>8.67</u> | 2.43  | <u>2.43</u> |



You are in charge of the till, Calculate the amount of change you would have to give to the customer in the follow situations. (Remember the strategy of counting up to the amount)

| Money Given          | Cost   | Change | Money Given | Cost    | Change  |
|----------------------|--------|--------|-------------|---------|---------|
| \$10<br>$10 - 3 = 7$ | \$3    | \$7    | \$20        | \$3.25  | \$16.75 |
| \$10                 | \$5    | \$5    | \$20        | \$15.65 | \$4.35  |
| \$10                 | \$2    | \$8    | \$20        | \$12.45 | \$7.55  |
| \$10                 | \$7    | \$3    | \$20        | \$7.42  | \$12.58 |
| \$10                 | \$5.50 | \$4.50 | \$20        | \$5.73  | \$14.27 |

### Word Problems

1) Keith loves eating fruits. Keith paid \$12.87 for cherries, and \$6.37 for peaches with a \$20 bill. How much change did Keith receive?

$$20 - 12.87 - 6.37$$

\$0.76

2) Melanie went to the mall on Saturday to buy clothes. She paid \$4.19 on a jacket and \$5.69 on a shirt with a \$20 bill. How much money did Melanie get in change?

\$10.12

3) Alyssa joined her school's band. She bought a trumpet for \$97.09, and a song book which was \$12.74 with two \$100 bills. How much change was Alyssa given?

\$90.17

4) Dan purchased a Spiderman game for \$5.10, and a baseball game for \$8.79 with a \$20 bill. How much change did Dan get?

\$6.11

# Unit 4

## Equation Solving

## Simple Linear Equations (A)

Solve for each variable.

$$1. \quad \frac{6z}{6} = \frac{-54}{6}$$
$$z = 9$$

$$6. \quad \frac{5c}{5} = \frac{-50}{5}$$
$$c = -10$$

$$11. \quad \frac{-2x}{-2} = \frac{-2}{-2}$$
$$x = 1$$

$$2. \quad \frac{6a}{6} = \frac{30}{6}$$
$$a = 5$$

$$7. \quad \frac{8b}{8} = \frac{8}{8}$$
$$b = 1$$

$$12. \quad \frac{5y}{5} = \frac{-40}{5}$$
$$y = -8$$

## Simple Linear Equations (A)

Solve for each variable.

$$1. \quad 2b - 8 = 2$$
$$\frac{2b}{2} = \frac{10}{2}$$
$$b = 5$$

$$6. \quad 2z - 5 = 5$$
$$\frac{2z}{2} = \frac{10}{2}$$
$$z = 5$$

$$11. \quad 2y - 9 = 1$$
$$\frac{2y}{2} = \frac{10}{2}$$
$$y = 5$$

$$2. \quad 2z - 6 = 6$$
$$\frac{2z}{2} = \frac{12}{2}$$
$$z = 6$$

$$7. \quad 3a - 10 = 2$$
$$\frac{3a}{3} = \frac{12}{3}$$
$$a = 4$$

$$12. \quad 3v - 8 = 19$$
$$\frac{3v}{3} = \frac{27}{3}$$
$$v = 9$$

## Simple Linear Equations (A)

Solve for each variable.

$$1. \quad 3z + 4 = 34$$

$$\begin{array}{r} 3z = 30 \\ \underline{3} \quad \underline{3} \\ z = 10 \end{array}$$

$$6. \quad 3x + 2 = 5$$

$$\begin{array}{r} 3x = 3 \\ \underline{3} \quad \underline{3} \\ x = 1 \end{array}$$

$$11. \quad 3z + 5 = 8$$

$$\begin{array}{r} 3z = 3 \\ \underline{3} \quad \underline{3} \\ z = 1 \end{array}$$

$$2. \quad 2u + 10 = 22$$

$$\begin{array}{r} 2u = 12 \\ \underline{2} \quad \underline{2} \\ u = 6 \end{array}$$

$$7. \quad 2a + 4 = 14$$

$$\begin{array}{r} 2a = 10 \\ \underline{2} \quad \underline{2} \\ a = 5 \end{array}$$

$$12. \quad 2c + 4 = 22$$

$$\begin{array}{r} 2c = 18 \\ \underline{2} \quad \underline{2} \\ c = 9 \end{array}$$

## Simple Linear Equations (B)

Solve for each variable.

$$1. \quad 3z + (-9) = -9$$

$$\begin{array}{r} 3z - 9 = -9 \\ \underline{3} \quad \underline{3} \\ z = 0 \end{array}$$

$$6. \quad 3a + (-2) = -5$$

$$\begin{array}{r} 3a - 2 = -5 \\ \underline{3} \quad \underline{3} \\ a = -1 \end{array}$$

$$11. \quad 2x + 10 = 22$$

$$\begin{array}{r} 2x = 12 \\ \underline{2} \quad \underline{2} \\ x = 6 \end{array}$$

$$2. \quad 2x + 3 = 5$$

$$\begin{array}{r} 2x = 2 \\ \underline{2} \quad \underline{2} \\ x = 1 \end{array}$$

$$7. \quad -2b + 1 = 5$$

$$\begin{array}{r} -2b = 4 \\ \underline{-2} \quad \underline{-2} \\ b = -2 \end{array}$$

$$12. \quad -2b + 8 = -8$$

$$\begin{array}{r} -2b = -16 \\ \underline{-2} \quad \underline{-2} \\ b = 8 \end{array}$$



## Simple Linear Equations (A)

Solve for each variable.

$$8.1. \frac{u}{8} = 2 \cdot 8$$

$$u = 16$$

$$2.6. \frac{u}{2} = 9 \cdot 2$$

$$u = 18$$

$$11. \frac{y}{6} = 8 \cdot 6$$

$$y = 48$$

$$3.2. \frac{b}{3} = 3 \cdot 3$$

$$b = 9$$

$$8.7. \frac{u}{8} = 8 \cdot 8$$

$$u = 64$$

$$12. \frac{x}{2} = 7 \cdot 2$$

$$x = 14$$

## Simple Linear Equations (A)

Solve for each variable.

$$1. -3 + \frac{y}{5} = -12 + 3$$

$$5. \frac{y}{5} = -9 \cdot 5$$

$$y = -45$$

$$6. 1 + \frac{y}{-3} = 9 - 1$$

$$\frac{y}{-3} = 8 \cdot -3$$

$$y = -24$$

$$11. \frac{x}{3} + (-4) = -1$$

$$\frac{x}{3} - 4 = -1 + 4$$

$$\frac{x}{3} = 3$$

$$2. \frac{c}{-2} + (-4) = -1$$

$$\frac{c}{-2} - 4 = -1 + 4$$

$$\frac{c}{-2} = -3 \cdot -2$$

$$c = 6$$

$$7. \frac{a}{-8} - 3 = 2 + 3$$

$$\frac{a}{-8} = 5 \cdot -8$$

$$a = -40$$

$$12. -2 + \frac{z}{-5} = 3 + 2$$

$$\frac{z}{-5} = 5 \cdot -5$$

$$z = -25$$

## Evaluating Expressions (A)

Evaluate each expression using the value given.

1.  $c \cdot c \div 4$   
( $c = 5$ )

$$5 \cdot 5 \div 4$$

$$\frac{25}{4}$$

6.  $z^4 \div z$   
( $z = 1$ )

$$1^4 \div 1 = \frac{1}{1} = 1$$

11.  $z \div (8 - z)$   
( $z = 1$ )

$$1 \div (8 - 1)$$

$$\frac{1}{7}$$

2.  $u + 4u$   
( $u = 6$ )

$$6 + 4 \cdot 6$$

$$6 + 24$$

$$= 30$$

7.  $7b \div b$   
( $b = 2$ )

$$7 \cdot 2 \div 2$$

$$7$$

*tough*  
\*12.  $6 - x \div 6$   
( $x = 7$ )

$$6 - 7 \div 6$$

$$\frac{36}{6} - \frac{7}{6} = \frac{29}{6}$$

## Distributive Property (A)

Use the distributive property to simplify each expression.

$2(4 + 9w)$

$$8 + 18w$$

$-8(6x + 3)$

$$-48x - 24$$

$2(3v - 8)$

$$6v - 16$$

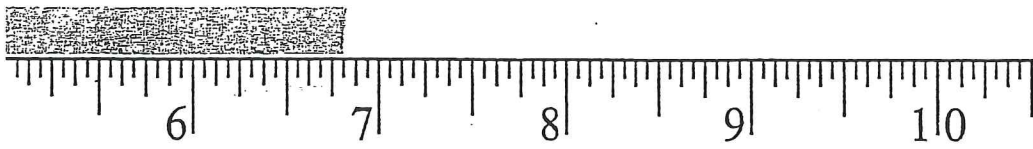
$(2 - 5m)(-5)$

$$-10 + 25m$$

# Unit 5

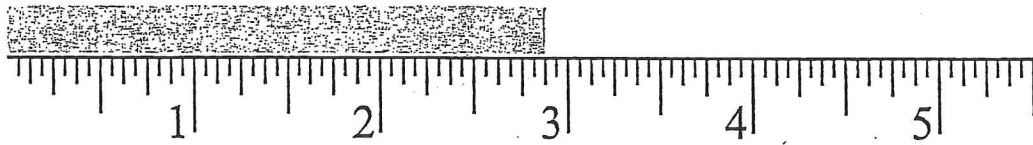
## Measurement

Name \_\_\_\_\_ Date \_\_\_\_\_



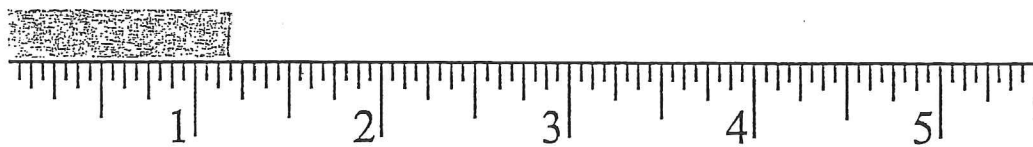
$$6 \frac{13}{16}''$$

---



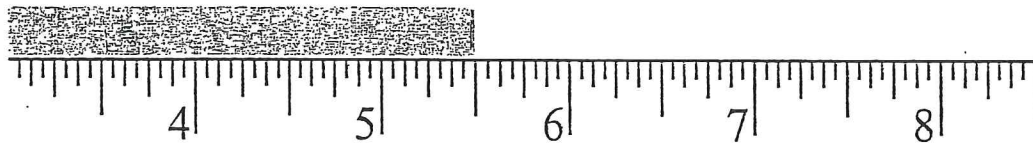
$$2 \frac{7}{8}''$$

---



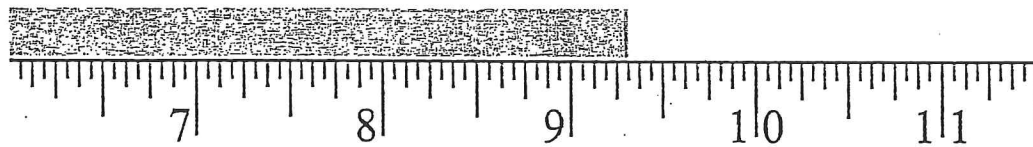
$$1 \frac{3}{16}''$$

---



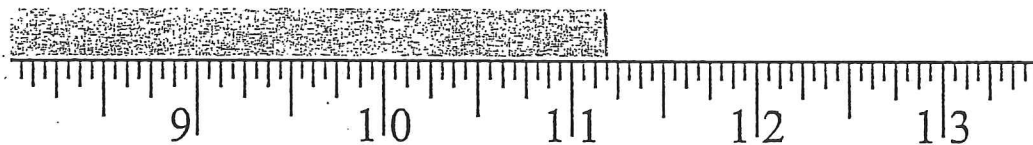
$$5 \frac{1}{2}''$$

---



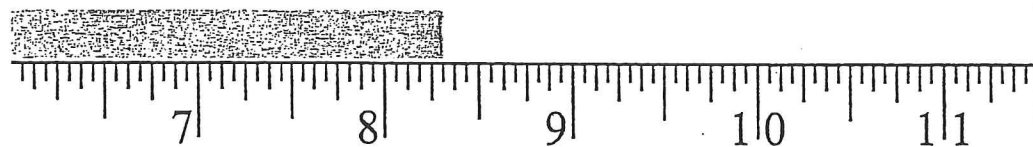
$$9 \frac{5}{16}''$$

---



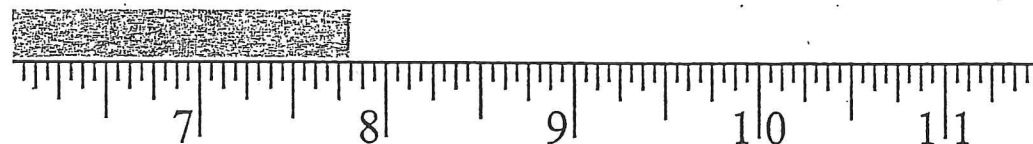
$$11 \frac{3}{16}''$$

---



$$8 \frac{5}{16}''$$

---



$$7 \frac{13}{16}''$$

---

## Converting Inches to Centimeters (A)

$$1 \text{ in} = 2.54 \text{ cm}$$

$$24 \text{ in} = \frac{60.96 \text{ cm}}{24 \times 2.54}$$

$$2 \text{ in} = \underline{5.08 \text{ cm}}$$

$$6 \text{ in} = \underline{15.24 \text{ cm}}$$

$$12 \text{ in} = \underline{30.48 \text{ cm}}$$

$$17 \text{ in} = \underline{43.18 \text{ cm}}$$

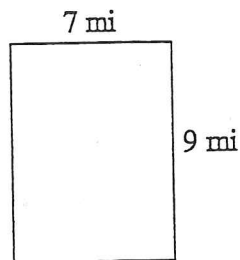
$$16 \text{ in} = \underline{40.64 \text{ cm}}$$

$$5 \text{ in} = \underline{12.7 \text{ cm}}$$

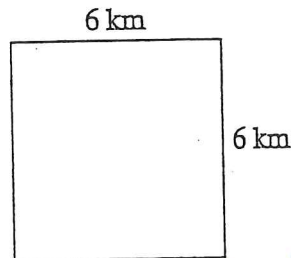
$$6 \text{ in} = \underline{15.24 \text{ cm}}$$

## Area and Perimeter of Rectangles (A)

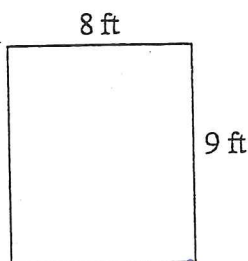
Find the area and perimeter of each rectangle.



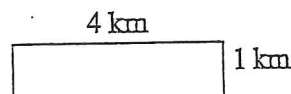
$$A = 7 \times 9 = 63 \text{ mi}^2$$
$$P = 7 + 7 + 9 + 9 = 32 \text{ mi}$$



$$A = 36 \text{ km}^2$$
$$P = 24 \text{ km}$$



$$A = 72 \text{ ft}^2$$
$$P = 34 \text{ ft}$$

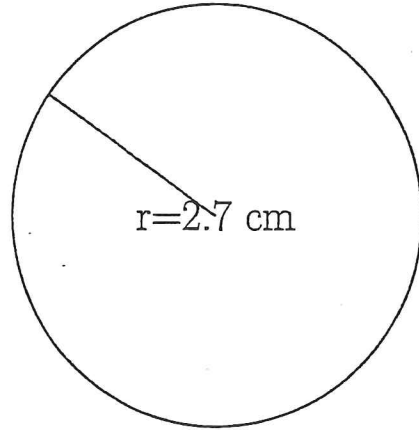
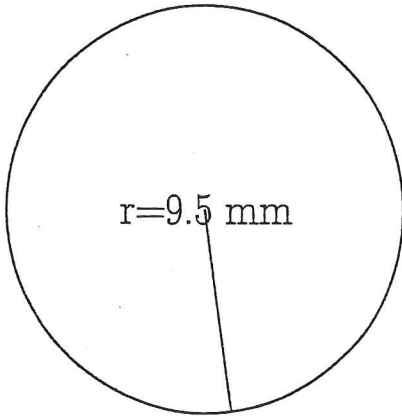


$$A = 4 \text{ km}^2$$
$$P = 10 \text{ km}$$



# Area and Circumference of Circles (A)

Calculate the area and circumference of each circle.

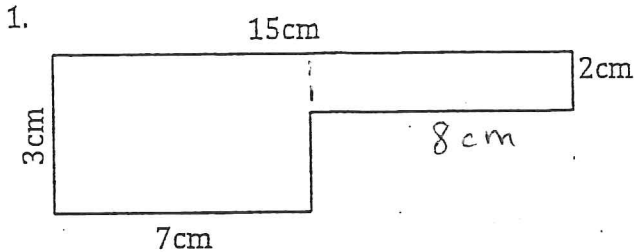


$$C = 2\pi r$$

$$\text{circumference} = \frac{2 \times \pi \times 9.5 = 59.7 \text{ mm}}{\quad} \quad \text{circumference} = \frac{16.96 \text{ cm}}{\quad}$$

$$\text{area} = \pi r^2 = \pi \times 9.5^2 = 283.5 \text{ mm}^2 \quad \text{area} = \frac{22.9 \text{ cm}^2}{\quad}$$

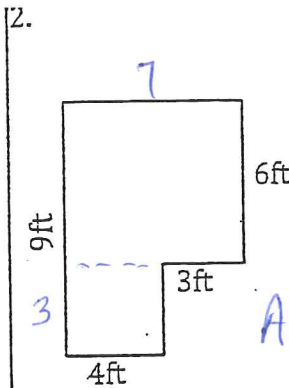
Find the area of each shape...



$$A = 3 \times 7 + 2 \times 8$$

$$= 21 + 16$$

$$= 37 \text{ cm}^2$$

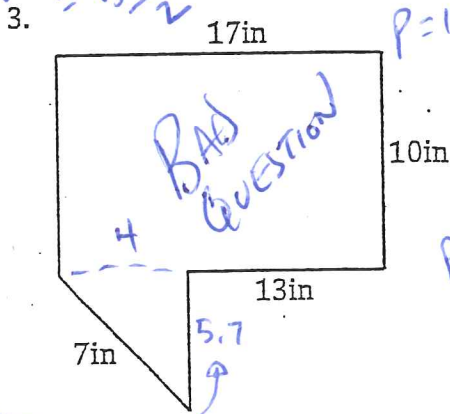


$$A = 3 \times 4 + 7 \times 6$$

$$= 12 + 42$$

$$= 54 \text{ ft}^2$$

Area of triangle =  $\frac{b \times h}{2}$



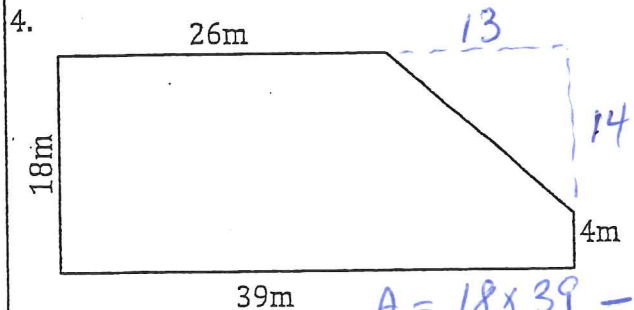
*not needed.*

$$P = 17 + 10 + 13 + 5.7 + 10$$

$$= 62.7 \text{ in}$$

$$A = 16 \times 17 + \frac{4 \times 5.7}{2}$$

$$= 181.4 \text{ in}^2$$



$$A = 18 \times 39 - \frac{13 \times 14}{2}$$

$$= 702 - 91$$

$$= 611 \text{ m}^2$$

# Unit 6

## Statistics

## Converting Celsius to Fahrenheit (A)

Estimate or convert the temperatures.

$$F = C \times 1.8 + 32$$

$$-44\text{ }^{\circ}\text{C} = \underline{-47.2}\text{ }^{\circ}\text{F}$$

$$75\text{ }^{\circ}\text{C} = \underline{167}\text{ }^{\circ}\text{F}$$

$$-74\text{ }^{\circ}\text{C} = \underline{-101.2}\text{ }^{\circ}\text{F}$$

$$39\text{ }^{\circ}\text{C} = \underline{102.2}\text{ }^{\circ}\text{F}$$

$$90\text{ }^{\circ}\text{C} = \underline{194}\text{ }^{\circ}\text{F}$$

$$56\text{ }^{\circ}\text{C} = \underline{132.8}\text{ }^{\circ}\text{F}$$

$$53\text{ }^{\circ}\text{C} = \underline{127.4}\text{ }^{\circ}\text{F}$$

$$-46\text{ }^{\circ}\text{C} = \underline{-50.8}\text{ }^{\circ}\text{F}$$

$$-11\text{ }^{\circ}\text{C} = \underline{12.2}\text{ }^{\circ}\text{F}$$

$$-63\text{ }^{\circ}\text{C} = \underline{-81.4}\text{ }^{\circ}\text{F}$$

$$73\text{ }^{\circ}\text{C} = \underline{163.4}\text{ }^{\circ}\text{F}$$

$$-20\text{ }^{\circ}\text{C} = \underline{-4}\text{ }^{\circ}\text{F}$$

## Converting Fahrenheit to Celsius (A)

Estimate or convert the temperatures.

$$C = (F - 32) \div 1.8$$

$$-90\text{ }^{\circ}\text{F} = \underline{-67.8}\text{ }^{\circ}\text{C}$$

$$22\text{ }^{\circ}\text{F} = \underline{-5.6}\text{ }^{\circ}\text{C}$$

$$-66\text{ }^{\circ}\text{F} = \underline{-54.4}\text{ }^{\circ}\text{C}$$

$$-47\text{ }^{\circ}\text{F} = \underline{-43.9}\text{ }^{\circ}\text{C}$$

$$-92\text{ }^{\circ}\text{F} = \underline{-68.9}\text{ }^{\circ}\text{C}$$

$$-83\text{ }^{\circ}\text{F} = \underline{-63.9}\text{ }^{\circ}\text{C}$$

$$98\text{ }^{\circ}\text{F} = \underline{36.7}\text{ }^{\circ}\text{C}$$

$$77\text{ }^{\circ}\text{F} = \underline{25}\text{ }^{\circ}\text{C}$$

$$45\text{ }^{\circ}\text{F} = \underline{7.2}\text{ }^{\circ}\text{C}$$

$$-30\text{ }^{\circ}\text{F} = \underline{-34.4}\text{ }^{\circ}\text{C}$$

$$99\text{ }^{\circ}\text{F} = \underline{37.2}\text{ }^{\circ}\text{C}$$

$$69\text{ }^{\circ}\text{F} = \underline{20.6}\text{ }^{\circ}\text{C}$$



Name : \_\_\_\_\_

Score : \_\_\_\_\_

Teacher : \_\_\_\_\_

Date : \_\_\_\_\_

### Mean, Mode, Median, and Range

1) 4, 3, 5, 3, 5, 3, 7, 2

Mean 4 Median 3.5 Mode 3 Range 7-2=5

2 3 3 3 4 5 5 7  
 $\frac{3+4}{2} = 3.5$   $\frac{32}{8} = 4$

6) 2, 5, 5, 2, 6 2 2 5 5 6

Mean 4 Median 5 Mode 2 Range 4

2) 1, 9, 9, 2, 1, 2

Mean 4 Median 2 Mode 1, 2, 9 Range 8

1 1 2 2 9 9

7) 8, 3, 3, 9, 9, 2, 2, 9, 9 2 2 3 3 8 9 9 9 9

Mean 6 Median 8 Mode 9 Range 7

3, 9, 8, 7, 2, 9, 4

Mean 6 Median 7 Mode 9 Range 7

2 3 4 7 8 9 9

8) 9, 2, 2, 5, 3, 5, 3, 5, 3, 3 2 2 3 3 3 3 5 5 5 9

Mean 4 Median 3 Mode 3 Range 7

4) 9, 8, 8, 5, 5, 2, 6, 5

Mean 6 Median 5.5 Mode 5 Range 7

2 5 5 5 6 8 8 9

9) 6, 6, 6, 6, 7, 4, 7

Mean 6 Median 6 Mode 6 Range 3

4 6 6 6 6 7 7

5) 3, 3, 2, 2, 2, 6

Mean 3 Median 2.5 Mode 2 Range 4

2 2 2 3 3 6

10) 7, 4, 4, 6, 9

Mean 6 Median 6 Mode 2 Range 5

4 4 6 7 9



## Ratios and Rates

Express each ratio as a fraction in the simplest form.

1) 20 footballs to 35 footballs \_\_\_\_\_

$$\begin{array}{l} 20:35 \\ 4:7 \end{array}$$

2) 12 rainy days out of 72 days \_\_\_\_\_

$$\begin{array}{l} 12:72 \\ 1:6 \end{array}$$

5) 16 red bikes out of 44 bikes \_\_\_\_\_

$$\begin{array}{l} 16:44 \\ 4:11 \end{array}$$

6) 12 nickels to 60 nickels \_\_\_\_\_

$$\begin{array}{l} 12:60 \\ 1:5 \end{array}$$

## Ratios and Rates

Express each phrase as a rate and unit rate.  
(Round your answer to the nearest hundredth.)

*use to help.*

Rate

Unit Rate

1) 115 miles on 5 gallons of gas

$$\frac{115 \text{ per } 5}{5}$$

$$\frac{23 \text{ miles/gal.}}{}$$

2) 6 calculators cost \$200.00

$$\frac{200 \text{ for } 6}{}$$

$$\frac{\$33.33/\text{calc}}{}$$

3) mowed 5 yards for \$20.00

$$\frac{20 \text{ for } 5}{}$$

$$\frac{\$4.00/\text{yard}}{}$$

4) 3 inches of snow in 7 hours

$$\frac{3 \text{ in } / 7 \text{ hrs}}{}$$

$$\frac{0.4 \text{ in } / \text{ hr.}}{}$$

5) 9 dollars for 2 cans of tuna

$$\frac{2 \text{ cans for } \$9}{}$$

$$\frac{\$4.50/\text{can}}{}$$

# **Unit 7**

## **Ratios and Proportions**

## Are They Equivalent? (A)

Check mark the equations that show equivalent fractions.

$$\frac{5}{11} = \frac{25}{55}$$

yes!  
275      275

$$\frac{5}{5} = \frac{10}{10}$$

$$\frac{6}{9} = \frac{30}{45}$$

$$\frac{8}{12} = \frac{32}{48}$$

$$\frac{5}{10} = \frac{15}{30}$$

$$\frac{10}{10} = \frac{30}{30}$$

$$\frac{4}{6} = \frac{20}{18}$$

$$\frac{1}{3} = \frac{2}{6}$$

## Equivalent Ratios (A)

What value of  $x$  makes each pair of ratios equivalent?

$$24:20 = 6:x$$

$\div 4$        $\div 4$

$$x = 5$$

$$6:x = 24:8$$
$$x = 2$$

$$6:6 = x:2$$
$$x = 2$$

$$20:10 = x:2$$
$$x = 4$$

Name \_\_\_\_\_

Date \_\_\_\_\_

## Shopping with Proportions

You go shopping and find all the items below. In each case, circle which set of items is a better deal (has the best unit price).

~~12 bags of pork rinds for \$1.25~~ OR 8 sticks of gum for \$0.75

4 DVDs for \$12.25 OR 3 Blue Rays for \$8.50 *better*  
 $\$3.06$  each  $\$2.83$  each.

~~2 iPods for \$310~~ OR ~~1 iPad for \$212~~

15 iTunes songs for \$11.50 OR 20 iTunes songs for \$14.85 *better*

$$\frac{11.5}{15} = \$0.77$$

$$\$0.74$$

11 apples for \$4.25 OR 6 pears for \$2.10 *better*

$$\$0.39$$
 ea

$$\$0.35$$

*better* 3 tires for \$180 OR 5 tires for \$350

$$\$60$$
 ea

$$\$70$$
 ea

*better* 15 packs of cards for \$32 OR 30 packs of cards for \$65

$$\$2.13$$
 ea

$$\$2.17$$
 ea

3 car washes for \$25 OR 5 car washes for \$40 *BEST*

$$25 \div 3 = \$8.33$$

$$40 \div 5 = \$8.00$$

*better* 6 hockey tickets for \$45 OR 9 hockey tickets for \$123

$$\$7.50$$
 ea

$$\$13.67$$
 each

22 rolls of towels for \$9.65 OR 40 rolls of towels for \$15.25 *better*

$$\$0.44$$
 ea

$$\$0.38$$
 ea

24 pens for \$11.25 OR 50 pens for \$19.99 *better*

$$\$0.47$$
 ea

$$\$0.40$$
 ea

Name \_\_\_\_\_

Date \_\_\_\_\_

**Solving for the Missing Proportions Version 1**

1  $\frac{4}{10} = \frac{32}{x}$   
 $10 \times 32 = 4$   
Answer:  $x = 80$

2  $\frac{k}{3} = \frac{90}{10}$   
Answer:  $k = 27$

3  $\frac{q}{3} = \frac{2}{6}$   
Answer:  $q = 1$

4  $\frac{15}{5} = \frac{y}{4}$   
Answer:  $y = 12$

5  $\frac{20}{5} = \frac{4}{z}$   
Answer:  $z = 1$

6  $\frac{6}{12} = \frac{b}{6}$   
Answer:  $b = 3$

7  $\frac{c}{3} = \frac{126}{18}$   
Answer:  $c = 21$

8  $\frac{8}{5} = \frac{w}{15}$   
Answer:  $w = 24$

9  $\frac{35}{7} = \frac{25}{x}$   
Answer:  $x = 5$

10  $\frac{2}{6} = \frac{7}{d}$   
Answer:  $d = 21$



# Unit 8

## Exponents

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## Squares (A)

---

Instructions: Find the square of each integer.

$30^2 = 900$

$5^2 = 25$

$24^2 = 576$

$12^2 = 144$

$28^2 = 784$

$31^2 = 961$

$15^2 =$

$10^2 = 100$

$18^2 = 324$

$4^2 = 16$

$9^2 = 81$

$14^2 = 196$

$11^2 = 121$

$22^2 = 484$

$7^2 = 49$

$20^2 = 400$

---

## Squares and Square Roots (A)

---

Instructions: Find the square root or square of each integer.

$\sqrt{256} = 16$

$\sqrt{4} = 2$

$\sqrt{169} =$

$\sqrt{100} = 10$

$\sqrt{121} = 11$

$\sqrt{196} = 14$

$\sqrt{16} = 4$

$\sqrt{64} = 8$

$\sqrt{1} = 1$

$\sqrt{9} = 3$

$\sqrt{49} = 7$

$\sqrt{144} = 12$

$\sqrt{225} = 15$

$\sqrt{81} = 9$

$\sqrt{25} = 5$

$\sqrt{36} = 6$



Name: \_\_\_\_\_

Score: \_\_\_\_\_

## Expanded and Exponent Form

ES1

(A) Rewrite each exponent form in expanded form:

|   |   |
|---|---|
| 1) $5^7$<br>= <u><math>5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5</math></u> | 2) $2^8$<br>= <u><math>2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2</math></u>          |
| 3) $1^6$<br>= <u><math>1 \times 1 \times 1 \times 1 \times 1 \times 1</math></u>          | 4) $8^9$<br>= <u><math>8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8</math></u> |
| 5) $7^2$<br>= <u><math>7 \times 7</math></u>  | 6) $9^3$<br>= <u><math>9 \times 9 \times 9</math></u>   |
| 7) $13^4$<br>= <u><math>13 \times 13 \times 13 \times 13</math></u>                       | 8) $12^7$<br>= <u><math>12 \times 12 \times 12 \times 12 \times 12 \times 12 \times 12</math></u>           |
| 9) $15^6$<br>= <u><math>15 \times 15 \times 15 \times 15 \times 15 \times 15</math></u>   | 10) $14^2$<br>= <u><math>14 \times 14</math></u>  |

(B) Rewrite each expanded form in exponent form:

|   |   |
|---|---|
| 1) $6 \times 6 \times 6$<br>= <u><math>6^3</math></u>   | 2) $7 \times 7 \times 7 \times 7 \times 7 \times 7 \times 7 \times 7 \times 7$<br>= <u><math>7^9</math></u> |
| 3) $11 \times 11 \times 11$<br>= <u><math>11^3</math></u>   | 4) $10 \times 10 \times 10 \times 10 \times 10$<br>= <u><math>10^5</math></u>                               |
| 5) $14 \times 14 \times 14 \times 14$<br>= <u><math>14^4</math></u>   | 6) $12 \times 12 \times 12$<br>= <u><math>12^3</math></u>   |
| 7) $8 \times 8 \times 8 \times 8 \times 8$<br>= <u><math>8^5</math></u>   | 8) $6 \times 6 \times 6 \times 6 \times 6 \times 6 \times 6 \times 6 \times 6$<br>= <u><math>6^9</math></u> |
| 9) $5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5$<br>= <u><math>5^{10}</math></u> | 10) $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$<br>= <u><math>2^7</math></u>                  |

## Exponent Rules (A)

Simplify each expression.

1.  $(7^4)^8 = 7^{32}$

2.  $3^7 \cdot 3^7 = 3^{14}$

3.  $\frac{4^3}{4^3} = 4^0$

4.  $2^6 \cdot 2^5 = 2^{11}$

5.  $(3^1)^7 = 3^7$

6.  $(4^6)^8 = 4^{48}$

## Dividing Exponents (A)

Simplify each expression.

1.  $\frac{4^6}{4^2} = 4^4$

2.  $\frac{4^8}{4^2} = 4^6$

3.  $\frac{9^7}{9^6} = 9^1$

4.  $\frac{8^6}{8^1} = 8^5$

5.  $\frac{3^4}{3^4} = 3^0$

6.  $\frac{7^6}{7^1} = 7^5$