

Name: _____

Order of Operations PEMDAS

Parentheses (Grouping Symbols)	$[(7 - 4)^2 + 3] + 15$
Exponents	$= [3^2 + 3] + 15$
Multiply or Divide, from left to right	$= [3 \cdot 3 + 3] + 15$
Add or Subtract, from left to right	$= [9 + 3] + 15$
	$= 12 + 15$
	$= 27$

NO CALCULATOR!

1. $6 \div 3 + 2 \cdot 7$	2. $5 + 8 \cdot 2 - 4$	3. $16 \div 8 \cdot 2^2$
4. $10 \div (3 + 2) + 9$	5. $7 \cdot [(18 - 6) - 6]$	6. $3 + (27 \div 9) - 5$
7. $(5 - 3)^2 + 3$	8. $[10 + (25 \cdot 2)] \div 6$	9. $(9 \cdot 2) + 18 \div 6$

Decimals – Adding and Subtracting

Rules:

- 1) Line up decimal points, if a number does not have a decimal point it is a whole number with the decimal point at the end.
- 2) Annex zeros to hold place.
- 3) Add or subtract vertically.
- 4) Bring down the decimal point.

$$4.1 + 3 + 5.61 + 21$$

$$16 - 7.498$$

$$4.10$$

$$16.000$$

$$3.00$$

$$\underline{- 7.498}$$

$$5.61$$

$$8.502$$

NO CALCULATOR! SHOW ALL WORK!

1. $42.78 + 19.56$	2. $0.0997 + 1.4$	3. $6.29 + 5$
4. $0.663 + 1.58$	5. $\$62.74 + \$1.75 + \$12$	6. $0.0674 + 0.12 + 0.0098$
7. $40.75 - 17.46$	8. $0.95 - 0.68$	9. $6 - 3.8$
10. $\$60 - \31.74	11. $\$12.36 - \8.75	12. $21.007 - 4.678$

Decimals – Multiplying and Dividing

Rules:

Multiplying

- 1) Line up digits, starting on the right.
- 2) Multiply
- 3) Place the decimal point in the answer by starting at the right and moving a number of places equal to the sum of the decimal places in both numbers multiplied.

$$\begin{array}{r}
 (6.432)(4.15) \\
 6.432 \text{ (3 decimal places)} \\
 \times \underline{4.15} \text{ (2 decimal places)} \\
 32160 \\
 64320 \\
 \underline{2572800} \\
 26.69280 \text{ (5 decimal places)}
 \end{array}$$

Dividing

- 1) If the divisor is not a whole number, move the decimal point To the right to make it a whole number and move the decimal Point in the dividend the same number of places.
- 2) Divide.
- 3) Bring the decimal point up.

$$\begin{array}{r}
 27.216 \div 4.8 \\
 \underline{5.67} \\
 48.)\underline{272.16} \\
 \underline{-240} \\
 321 \\
 \underline{-288} \\
 336 \\
 \underline{-336}
 \end{array}$$

NO CALCULATOR! SHOW ALL WORK!

1. 5.4×0.07

2. 5.9×1.2

3. 69.3×0.15

4. 3.96×3.3

5. 9.01×0.48

6. $0.24 \div 0.8$

7. $84.48 \div 0.88$

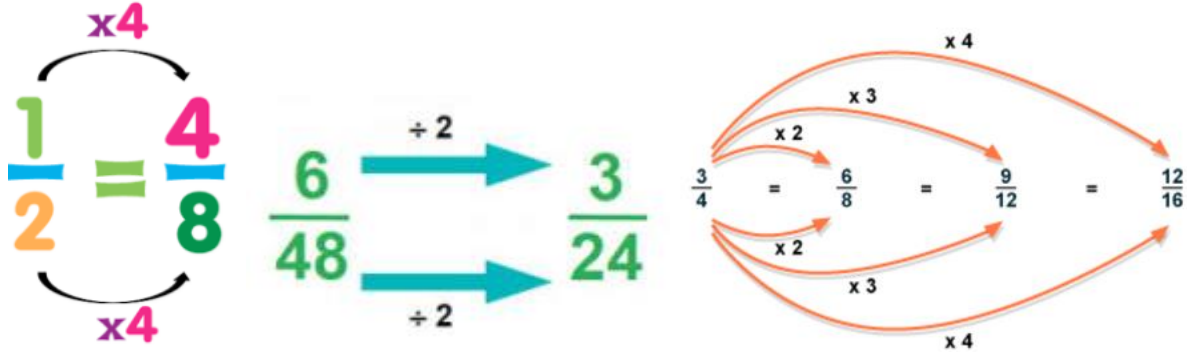
8. $6.56 \div 4$

9. $34.06 \div 0.13$

10. $147 \div 0.49$

Equivalent Fractions

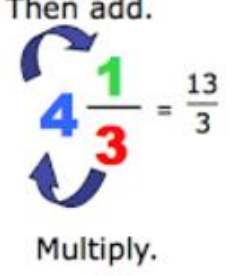
To find an equivalent fraction multiply or divide the numerator and denominator by the same value.



Name three equivalent fractions to the one given:

1. $\frac{4}{5}$	2. $\frac{10}{15}$
3. $\frac{1}{7}$	4. $\frac{16}{40}$
5. $\frac{12}{30}$	6. $\frac{6}{8}$
7. $\frac{2}{9}$	8. $\frac{14}{35}$
9. $\frac{18}{28}$	10. $\frac{80}{120}$

Converting Mixed Numbers to Improper Fractions

<p style="color: blue;"><i>Multiply the whole number by the denominator and add the numerator.</i></p> <p style="color: blue;"><i>Keep the same denominator.</i></p> <div style="text-align: center;"> <p>Then add.</p>  <p>Multiply.</p> </div>	<p>Convert $\frac{20}{3}$ to a mixed number</p> <p style="color: red;"><i>Divide the numerator by the denominator</i></p> <p>$20 \div 3 = 6$ plus 2 remainder</p> <p>$\frac{20}{3} = 6\frac{2}{3}$</p> <p style="color: red;"><i>6 becomes the whole number 2 is the numerator of the fraction as shown 3 is the denominator</i></p>
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Convert to Mixed Number or Improper Fractions:

1. $3\frac{1}{2} =$	2. $\frac{15}{2} =$
3. $7\frac{2}{3} =$	4. $\frac{31}{6} =$
5. $8\frac{3}{5} =$	6. $\frac{74}{9} =$
7. $2\frac{7}{9} =$	8. $\frac{49}{11} =$
9. $12\frac{5}{10} =$	10. $\frac{122}{13} =$

Fractions – Adding and Subtracting

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

$$\frac{9}{12} + \frac{4}{12} =$$

$$\frac{13}{12} = 1\frac{1}{12}$$

If the denominators are different, find the least common multiple of the two numbers and convert both fractions to the matching common denominator.

$$\frac{5}{6} - \frac{3}{9} =$$

$$\frac{15}{18} - \frac{6}{18} =$$

$$\frac{11}{18}$$

NO CALCULATOR! SHOW ALL WORK!

1. $\frac{2}{3} + \frac{1}{5} =$

2. $\frac{1}{7} + \frac{1}{3} =$

3. $\frac{2}{10} + \frac{1}{2} =$

4. $\frac{7}{8} - \frac{1}{2} =$

5. $\frac{5}{6} - \frac{2}{3} =$

6. $\frac{5}{9} - \frac{2}{4} =$

7. $\frac{7}{12} + \frac{2}{9} =$

8. $\frac{14}{15} + \frac{3}{5} =$

9. $\frac{9}{16} + \frac{5}{24} =$

10. $\frac{12}{16} - \frac{1}{4} =$

11. $\frac{27}{33} - \frac{5}{11} =$

12. $\frac{15}{18} - \frac{4}{9} =$

Fractions – Multiplying

Multiply the numerators

$$\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$$

Multiply the denominators

$$\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$$

Reduce the fraction if necessary

$$\frac{6}{20} = \frac{3}{10}$$

NO CALCULATOR! SHOW ALL WORK!

$$1. \frac{1}{3} \times \frac{1}{5} =$$

$$2. \frac{2}{7} \times \frac{2}{5} =$$

$$3. \frac{4}{9} \times \frac{1}{2} =$$

$$4. \frac{3}{8} \times \frac{3}{4} =$$

$$5. \frac{9}{10} \times \frac{1}{9} =$$

$$6. \frac{7}{12} \times \frac{2}{5} =$$

$$7. \frac{6}{11} \times \frac{2}{4} =$$

$$8. \frac{5}{6} \times \frac{2}{9} =$$

$$9. \frac{12}{20} \times \frac{3}{7} =$$

$$10. \frac{5}{13} \times \frac{4}{6} =$$

$$11. \frac{15}{25} \times \frac{5}{15} =$$

$$12. \frac{6}{10} \times \frac{3}{9} =$$

Geometry-Perimeter and Area

Perimeter:

Perimeter of a rectangle

The opposite sides of a rectangle are congruent.

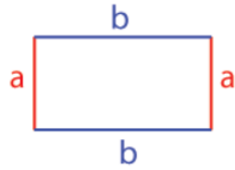
$$P = a + b + a + b$$

$$P = a + b + a + b$$

Example:

If $a = 3$ units and $b = 5$ units then

Perimeter (P) = $3 + 5 + 3 + 5 = 16$ units

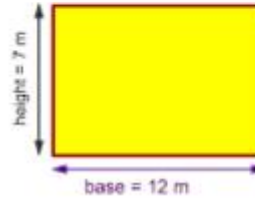


Area:

Area of Rectangle

The area of a Rectangle equals the base times the height.

$$A = b \times h$$

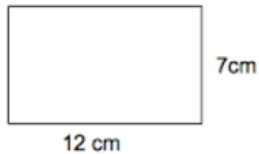


$$A = b \times h$$

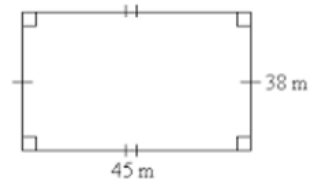
$$A = 12 \times 7$$

$$A = 84 \text{ m}^2$$

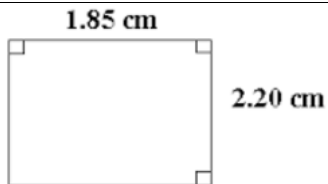
Find the perimeter and area of each shape:



Perimeter: _____ Area: _____



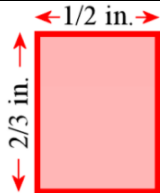
Perimeter: _____ Area: _____



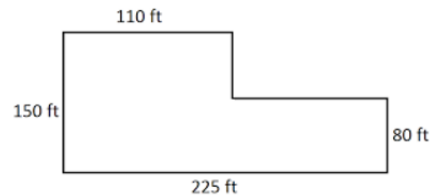
Perimeter: _____ Area: _____



Perimeter: _____ Area: _____



Perimeter: _____ Area: _____



Perimeter: _____ Area: _____

Use an integer strategy (see next page) to find each answer.

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

$$(-5) - (+12) =$$

$$(-10) + (-10) =$$

$$(+6) - (+9) =$$

$$(+6) + (+9) =$$

$$(-4) \times (+7) =$$

$$(-36) \div (+3) =$$

$$(-10) + (+12) =$$

$$(+11) + (-2) =$$

$$(-12) \times (-8) =$$

$$(+6) - (+6) =$$

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

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

$$(+10) \div (-10) =$$

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

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

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

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

$$(-12) \div (+12) =$$

$$(-6) \times (+12) =$$

$$(-12) \times (+1) =$$

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

$$(+1) + (-11) =$$

$$(-10) \times (-3) =$$

$$(+11) - (-10) =$$

$$(-10) - (-3) =$$

$$(+44) \div (+11) =$$

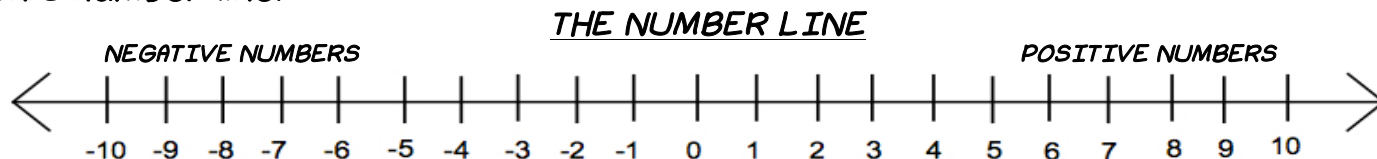
$$(-66) \div (-11) =$$

$$(+12) \times (+11) =$$

$$(-8) \times (+1) =$$

INTEGER HELPER SHEET

Integers- A set of positive and negative whole numbers. They can be represented on a number line.



Absolute Value- The distance a number is from zero on the number line. An absolute value is never negative. Examples: $|-5| = 5$ and $|5| = 5$

ADDING INTEGERS

SAME SIGN- Add and Keep the Sign!

Add the absolute value of the numbers and keep the same sign.

$$(\text{positive}) + (\text{positive}) = \text{Positive}$$

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

$$(\text{negative}) + (\text{negative}) = \text{Negative}$$

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

DIFFERENT SIGNS- Subtract and Keep the Sign of the Bigger Number!

Subtract the absolute value of the numbers and keep the sign of the bigger number.

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

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

SUBTRACTING INTEGERS

Do not subtract integers. You must change the signs:

"Add the Opposite"

KEEP- Keep the sign of the first number

CHANGE- Change the subtraction sign to addition

CHANGE- Change the sign of the second number to the opposite sign. If it is positive- change to negative. If it is negative- change to positive.

$$(+4) - (-4)$$

$$\begin{array}{ccc} \text{Keep} & \text{change} & \text{change} \\ (+4) & + & (+4) \end{array}$$

NOW USE THE RULES FOR ADDING:

SAME SIGN- Add absolute values and keep sign:

$$(+4) + (+4) = 8$$

MULTPLYING INTEGERS

SAME SIGNS- POSITIVE

Multiply the numbers. Answer will be positive.

$$(-5) \times (-5) = +25$$

DIFFERENT SIGNS- NEGATIVE

Multiply the numbers. Answer will be negative

$$(+5) \times (-5) = -25$$

DIVIDING INTEGERS

SAME SIGNS- POSITIVE

Divide the numbers. Answer will be positive.

$$(-5) \div (-5) = +1$$

DIFFERENT SIGNS- NEGATIVE

Divide the numbers. Answer will be negative

$$(+5) \div (-5) = -1$$