



**ST. THOMAS
AQUINAS
CATHOLIC SCHOOL**

***Summer Math Packet
For Students Entering 6th Grade***

St. Thomas Aquinas Catholic School

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NO CALCULATOR! SHOW ALL WORK!

Whole Numbers – Adding and Subtracting

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A) $451 + 23 + 659$

$$\begin{array}{r} 11 \\ 451 \\ 23 \\ + \underline{659} \\ 1134 \end{array}$$

B) $700 - 128$

$$\begin{array}{r} 6910 \\ \cancel{7}\cancel{0}\cancel{0} \\ - \underline{128} \\ 572 \end{array}$$

NO CALCULATOR! SHOW ALL WORK!

1. $623 + 433 + 56$

2. $893 - 395$

3. $1987 + 432 + 543 + 28$

4. $196 - 129 =$

5. $98 + 45 - 32$

6. $65 - 32 + 77$

7. $439 + 53 - 488$

8. $763 - 492 + 157$

$$1820 \div 28$$

$$\begin{array}{r} \overset{1}{\cancel{4}} \times \\ 653 \\ \times 29 \\ \hline 5877 \\ +13060 \\ \hline 18937 \end{array}$$

$$\begin{array}{r} 65 \\ 28 \overline{)1820} \\ \underline{-168} \\ 140 \\ \underline{-140} \\ 0 \end{array}$$

$$\begin{array}{r} 28 \\ \times 6 \\ \hline 168 \end{array} \quad \begin{array}{r} 28 \\ \times 5 \\ \hline 140 \end{array}$$

NO CALCULATOR! SHOW ALL WORK!

3. 23×15

5. 471×16

6. 981×65

8. $2124 \div 4$

9. $32751 \div 9$

11. $42800 \div 25$

12. $3348 \div 31$

Order of Operations

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Parentheses (Grouping Symbols) Exponents Multiply or Divide, from left to right Add or Subtract, from left to right	$[(7 - 4)^2 + 3] + 15$ $= [3^2 + 3] + 15$ $= [3 \cdot 3 + 3] + 15$ $= [9 + 3] + 15$ $= 12 + 15$ $= 27$
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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. $(9 \cdot 2) + 18 \div 6$

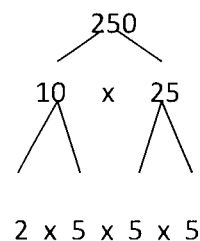
Use Euclid's Ladder (or a factor tree) to write the prime factorization.

$$\begin{array}{r} 2 \overline{)60} \\ 2 \overline{)30} \\ 3 \overline{)15} \\ 5 \end{array}$$

$$60 = 2 \times 2 \times 3 \times 5$$

$$\begin{array}{r} 2 \overline{)250} \\ 5 \overline{)125} \\ 5 \overline{)25} \\ 5 \end{array}$$

$$125 = 2 \times 5 \times 5 \times 5 \quad \text{OR}$$



1. 64

2. 100

3. 72

4. 48

5. 36

6. 54

Greatest Common Factor

Find the GCF of 24 and 36.

24: 1, 2, 3, 4, 6, 8, **12**, 24

36: 1, 2, 3, 4, 6, 9, **12**, 18, 36

GCF of 24 and 36 is **12**.

No calculator! SHOW ALL WORK!

1. 18 and 54	2. 36 and 54
3. 24 and 60	4. 32 and 56
5. 100 and 75	6. 28 and 49
7. 35 and 50	8. 64 and 88

Least Common Multiple

Find the LCM of 8 and 12.

8: 8, 16, **24**, 32, 40, 48, 56, ...

12: 12, **24**, 36, 48, 60, 72, ...

LCM of 8 and 12 is **24**.

No calculator! SHOW ALL WORK!

1. 6 and 8

2. 4 and 6

3. 5 and 7

4. 12 and 18

5. 6 and 9

6. 12 and 9

7. 15 and 6

8. 14 and 4

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.

$$4.1 + 3 + 5.61 + 21$$

$$16 - 7.498$$

$$4.10$$

$$16.000$$

$$3.00$$

$$\begin{array}{r} - 7.498 \\ \hline \end{array}$$

$$5.61$$

$$8.502$$

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. $21.007 - 4.678$

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.

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

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.

$$\begin{array}{r}
 27.216 \div 4.8 \\
 \hline
 5.67 \\
 48.)272.16 \\
 \underline{-240} \\
 321 \\
 \underline{-288} \\
 336 \\
 \underline{-336} \\
 0
 \end{array}$$

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. $0.24 \div 0.8$

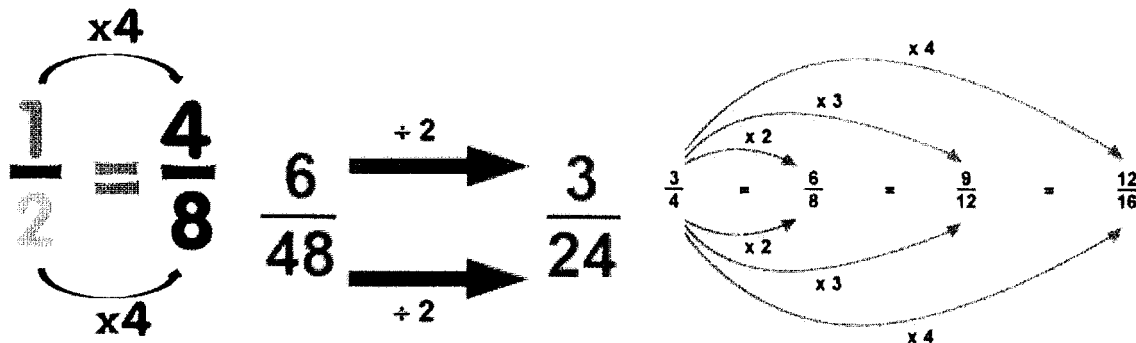
7. $84.48 \div 0.88$

8. $6.56 \div 4$

9. $34.06 \div 0.13$

10. $147 \div 0.49$

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. $\frac{80}{120}$

Multiply the whole number by the denominator and add the numerator. Keep the same denominator. Then add. $4 \frac{1}{3} = \frac{13}{3}$ Multiply.	Convert $\frac{20}{3}$ to a mixed number Divide the numerator by the denominator $20 \div 3 = 6$ plus 2 remainder $\frac{20}{3} = 6 \frac{2}{3}$ 6 becomes the whole number 2 is the numerator of the fraction as shown 3 is the denominator
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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. $\frac{122}{13} =$

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

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

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

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

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

Perimeter:

Perimeter of a rectangle

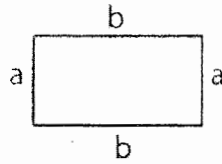
The opposite sides of a rectangle are congruent

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

$$P = 2a + 2b$$

Example:

If $a = 3$ units and $b = 5$ units then
Perimeter (P) = $3 + 5 + 3 + 5 = 16$ units

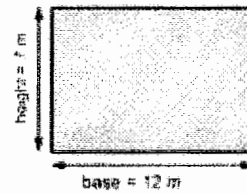


Area:

Area of Rectangle

The area of a Rectangle equals the base times the height

$$A = b \times h$$

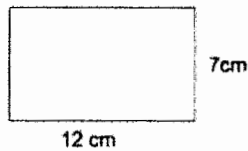


$$A = b \times h$$

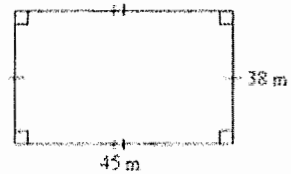
$$A = 12 \times 7$$

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

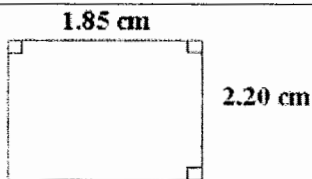
Find the perimeter and area of each shape:



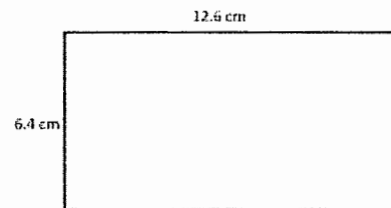
Perimeter: _____ Area: _____



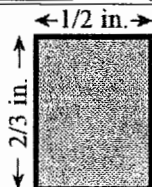
Perimeter: _____ Area: _____



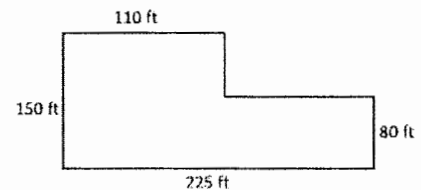
Perimeter: _____ Area: _____



Perimeter: _____ Area: _____



Perimeter: _____ Area: _____



Perimeter: _____ Area: _____