

# Incoming Math for Liberal Arts Students

*Below is the summer work for Math for Liberal Arts. It is imperative that you are well prepared for this course and come with completed summer work as well as strong skills in the following topics. This packet is due the first day of class.*

Jorge finds that 56% of his 75 classmates like salsa music and 80% of his 60 relatives like salsa music. How many more of Jorge's relatives as compared to his classmates like salsa music?

Ezra is saving money to buy a snowboard that costs \$225. He already has \$45 and can earn the rest by walking ten dogs. If  $d$  represents how much he earns for walking each dog, which of the following equations can be solved to find how much Ezra is paid for walking each dog?

- (A)  $225 = 45d - 10$
- (B)  $225 - 45 = 10d$
- (C)  $25 + 45 = 10d$
- (D)  $45 = 225 - d$

An arborist examined trees in an orchard to see if they were infected with a virus. Out of 90 trees, 10% had the virus. How many trees were infected with the virus?

A \$130 mountain bike costs \$143 after sales tax is figured in. What is the sales tax percentage?

**(Basic Operations)**

Evaluate

1)  $\frac{-1}{4} \div 5$

2)  $-20 + 7 - 3$

3)  $-\frac{5}{6} + \frac{6}{5}$

4)  $12 \div 3 + 6 \times 17 - 3$

5)  $\frac{3(8) - 3^2}{15 \div 5}$

6) Evaluate the expression  $xy^2 - z$  if  $x = 3$ ,  $y = 4$  and  $z = 2$

**Combining Like Terms, Solving multi-step equations**

1) Simplify:  $3y^3 + 2y^2 + 4y^3$

2) Simplify:  $9(3x + 1) + 2$

3) Solve:  $\frac{1}{2} - \frac{1}{3}y = 3 + \frac{1}{2}y$

4) Solve:  $3(2 + d) - 8 = 3d - 2$

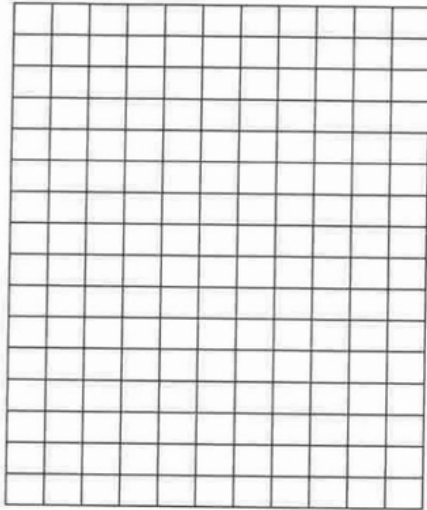
5) Solve:  $\frac{-x}{3} - 5 = 14$

6) Solve for a:  $\frac{3x - 2y}{a} = 4$

**Graphing Linear Equations, Finding slope, Writing the equation of a line**

Graph

a.  $y=4x -2$



1)

Find the slope of the line that passes through each pair of points  $(8, -2), (-3, 7)$

2)

Write the slope-intercept form of the equation.

3)

a. passes through  $(4, -6)$  and is parallel to  $x + 2y = 5$

4)

b. passes through  $(-2, 3)$  and is perpendicular to  $y = \frac{1}{4}x - 4$

**Solving Systems of Equations using Elimination and Substitution**

Solve by Elimination:

$$\begin{array}{l} -x + 3y = 6 \\ 1) \quad x + 3y = 18 \end{array}$$

Solve by Substitution:

$$\begin{array}{l} x + 2y = 13 \\ 2) \quad 3x - 5y = 6 \end{array}$$

**(Multiplying Polynomials)**

Find each product

a.  $5x(-x^2 - x + 4)$

b.  $y(-5y + 2) + 6y$

**FACTORING: Using GCF, By Grouping, AC Method**

1)  $18a^2bc^2 - 48abc^4$  (using GCF)

2)  $18y^2 - 30y - 3y + 5$  (Factor by Grouping)

3)  $g^2 - 19g + 60$  (Simple trinomial factoring)

**Rewriting Rational Exponents as Radicands and Vice Versa**

For #1 and #2, rewrite in radicand form with positive exponents

1.  $y^{\frac{3}{2}}$

2.  $\frac{1}{x^{-\frac{4}{3}}}$

For 3 and 4, rewrite in exponent form

3.  $\sqrt[5]{x^7}$

4.  $\sqrt[4]{y^3}$