8th Grade Math - Summer Review Packet – 2022

DUE **AUGUST 31, 2022** in the appropriate Google Classroom

Welcome to Saint Dominic Academy! We are glad you are here with us.
In preparation for the Fall Semester, this assignment is required to prepare you for your Pre-Algebra or Algebra 1 Course.

About Pre-Algebra & Algebra I:

Algebra teaches students to think, reason, and communicate mathematically. Students use variables to determine solutions to real world problems. Skills gained in Algebra provide students with a foundation for subsequent math courses. Students use a graphing calculator as an integral tool in analyzing data and modeling functions to represent real world applications. Each student is expected to use calculators in class, on homework, during tests, and during midterm and final exams. You will be able to use this calculator for your four years at Saint Dominic Academy Academy and beyond.

Expectations of the Summer Packet:

The problems in this packet are designed to help you review topics that are important to your success in 8th Grade Math. ***All work must be shown for each problem***. The problems should be done correctly, not just attempted. Don't forget to check your work for problems when solutions can be checked.

All work should be completed and ready to turn in on the first day of classes.
There may be a QUIZ at the beginning of school on this material.

Notes: The internet is a great resource… use it!
Some helpful sites:
www.purplemath.com/modules/index.html
www.youtube.com
www.khanacademy.com

Enjoy your summer!

Contents

Section 1. Order of Operations

Evaluate Numerical Expressions Numerical expressions often contain more than one operation. To evaluate them, use the rules for order of operations shown below.

Order of Operations	**Step 1** Evaluate expressions inside grouping symbols. **Step 2** Evaluate all powers. **Step 3** Do all multiplication and/or division from left to right. **Step 4** Do all addition and/or subtraction from left to right.

Example 1: Evaluate each expression.

a. 3^4

$3^4 = 3 \cdot 3 \cdot 3 \cdot 3$ — Use 3 as a factor 4 times.

$= 81$ — Multiply.

b. 6^3

$6^3 = 6 \cdot 6 \cdot 6$ — Use 6 as a factor 3 times.

$= 216$ — Multiply.

Example 2: Evaluate each expression.

a. $3[2 + (12 \div 3)^2]$

$3[2 + (12 \div 3)^2] = 3(2 + 42)$ — Divide 12 by 3.

$= 3(2 + 16)$ — Find 4 squared.

$= 3(18)$ — Add 2 and 16.

$= 54$ — Multiply 3 and 18.

b. $\frac{3+2^3}{4^2 \cdot 3}$

$\frac{3+2^3}{4^2 \cdot 3} = \frac{3+8}{4^2 \cdot 3}$ Evaluate power in numerator.

$= \frac{11}{4^2 \cdot 3}$ Add 3 and 8 in the numerator.

$= \frac{11}{16 \cdot 3}$ Evaluate power in denominator.

$= \frac{11}{48}$ Multiply.

Evaluate each expression <u>without a calculator</u>. Show each step.

1. $(8 - 4) \cdot 2$

2. $15 - 12 \div 4$

3. $24 \div 3 \cdot 2 - 3^2$

4. $3^2 \div 3 + 2^2 \cdot 7 - 20 \div 5$

5. $\frac{2 \cdot 4^2 - 8 \div 2}{(5 + 2) \cdot 2}$

6. $\frac{4(5^2 - 4 \cdot 3)}{4(4 \cdot 5 + 2)}$

Section 2. Integer Operations

Adding and Subtracting.

Same Signs (+ + or − −)		Different Signs (+ − or − +)	
3 + 5 = 8	3 and 5 are positive. Their sum is positive.	3 + (− 5) = − 2	− 5 has the greater absolute value. Their sum is negative.
− 3 + (− 5) = − 8	− 3 and − 5 are negative. Their sum is negative.	− 3 + 5 = 2	5 has the greater absolute value. Their sum is positive.

Multiplying and Dividing

Same Signs (+ + or − −)		Different Signs (+ − or − +)	
3 (5) = 15	3 and 5 are positive. Their product is positive.	3 (− 5) = − 15	3 and 5 have different signs. Their product is negative.
− 3 (− 5) = 15	− 3 and − 5 are negative. Their product is negative.	− 3 (5) = − 15	− 3 and 5 have different signs. Their product is negative.

Find each sum or difference <u>without a calculator</u>.

7. $-8 + 13$

8. $11 + (-19)$

9. $-47 - 13$

Find each product or quotient <u>without a calculator</u>.

10. $5\,(11)$

11. $54 \div -6$

12. $-8\,(-7)$

Section 3. Operations with Rational Numbers

A **rational number** is a number that can be expressed as a fraction $\frac{a}{b}$, where *a* and *b* are integers and b ≠ 0.

Example 1. To multiply fractions, multiply the numerators and denominators, and simplify.

$$\frac{3}{5}\cdot\frac{5}{6}=\frac{15}{30}=\frac{1}{2}$$

Example 2. To divide one fraction by another fraction, multiply the dividend by the reciprocal of the divisor.

$$\frac{16}{9}\div\frac{4}{9}=\frac{16}{9}\cdot\frac{9}{4}=\frac{16}{4}=4$$

Example 3. To add fractions with unlike denominators, rewrite the fraction using the Least Common Denominator and then add the numerators.

$$\frac{1}{2}+\frac{2}{3}=\frac{3}{6}+\frac{4}{6}=\frac{7}{6}$$

Example 3. To subtract fractions with unlike denominators, rewrite the fraction using the Least Common Denominator and then subtract the numerators.

$$\frac{3}{8}-\frac{1}{3}=\frac{9}{24}-\frac{8}{24}=\frac{1}{24}$$

Find each product or quotient.

13. $\frac{1}{3}\cdot\frac{6}{5}$

14. $\frac{11}{3}\cdot\frac{9}{44}$

15. $\frac{1}{2}\div\frac{3}{5}$

16. $\frac{3}{25}\div\frac{2}{15}$

Find each sum or difference.

17. $\frac{3}{7}+\frac{5}{14}$

18. $\frac{3}{8}+\frac{1}{6}$

19. $\frac{7}{10}-\frac{2}{15}$

20. $\frac{13}{20}-\frac{2}{5}$

Section 4. Solving One-Step Equations

Solve Equations Using Addition, Subtraction, Multiplication or Division

If the same number is added to each side of an equation, the resulting equation is equivalent to the original one. In general if the original equation involves subtraction, this property will help you solve the equation.

Similarly, if the same number is subtracted from each side of an equation, the resulting equation is equivalent to the original one.

If each side of an equation is multiplied or divided by the same nonzero number, the resulting equation is equivalent to the given one.

Addition Property of Equality	For any numbers a, b, and c, if $a = b$, then $a + c = b + c$.
Subtraction Property of Equality	For any numbers a, b, and c, if $a = b$, then $a - c = b - c$.
Multiplication Property of Equality	For any numbers a, b, and c, if $a = b$, then $ac = bc$.
Division Property of Equality	For any numbers a, b, and c, with $c \neq 0$, if $a = b$, then $\frac{a}{b} = \frac{b}{c}$.

Example 1: Solve $m - 32 = 18$.

$m - 32 = 18$	Original equation
$m - 32 + 32 = 18 + 32$	**Add** 32 to each side.
$m = 50$	Simplify.

The solution is 50.

Example 2: Solve $22 + p = -12$.

$22 + p = -12$	Original equation
$22 + p - 22 = -12 - 22$	**Subtract** 22 from each side.
$p = -34$	Simplify.

The solution is –34.

Example 3: Solve $3\frac{1}{2}p = 1\frac{1}{2}$.

$3\frac{1}{2}p = 1\frac{1}{2}$	Original equation
$\frac{7}{2}p = \frac{3}{2}$	Rewrite each mixed number as an improper fraction.
$\frac{2}{7}\left(\frac{7}{2}p\right) = \frac{2}{7}\left(\frac{3}{2}\right)$	**Multiply** each side by $\frac{2}{7}$.
$p = \frac{3}{7}$	Simplify.

The solution is $\frac{3}{7}$.

Example 4: Solve $-5n = 60$.

$-5n = 60$	Original equation
$\frac{-5n}{-5} = \frac{60}{-5}$	**Divide** each side by –5.
$n = -12$	Simplify.

The solution is –12.

Solve each equation

21. $b - 40 = -40$

22. $x + 12 = 6$

23. $w + 2 = -13$

24. $\frac{7}{10}m = 10$

25. $3h = -42$

26. $-3t = 51$

Section 5. Solving Multi-Step Equations

Variables on Each Side To solve an equation with the same variable on each side, first use the Addition or the Subtraction Property of Equality to write an equivalent equation that has the variable on just one side of the equation. Then solve the equation.

Grouping Symbols When solving equations that contain grouping symbols, first use the Distributive Property to eliminate grouping symbols. Then solve.

Example 1: Solve $5y - 8 = 3y + 12$.

$5y - 8 = 3y + 12$

$5y - 8 - 3y = 3y + 12 - 3y$

$2y - 8 = 12$

$2y - 8 + 8 = 12 + 8$

$2y = 20$

$\frac{2y}{2} = \frac{20}{2}$

$y = 10$

The solution is 10.

Example 2: Solve $4(2a - 1) = -10(a - 5)$.

$4(2a - 1) = -10(a - 5)$ Original equation

$8a - 4 = -10a + 50$ Distributive Property

$8a - 4 + 10a = -10a + 50 + 10a$ Add $10a$ to each side.

$18a - 4 = 50$ Simplify.

$18a - 4 + 4 = 50 + 4$ Add 4 to each side.

$18a = 54$ Simplify.

$\frac{18a}{18} = \frac{54}{18}$ Divide each side by 18.

$a = 3$ Simplify.

The solution is 3.

Solve each equation

27. $5y - 2y = 3y + 2$

28. $5x + 2 = 2x - 10$

29. $18 = 3(2t + 2)$

30. $5(p + 3) + 9 = 3(p - 2) + 6$

Section 6. Solving Inequalities

Solve Inequalities by Multiplication or Division If each side of an inequality is multiplied by (or divided by) the same positive number, the resulting inequality is also true. However, if each side of an inequality is multiplied by (or divided by) the same negative number, the direction of the inequality must be reversed for the resulting inequality to be true.

Example 1: Solve $-\frac{y}{8} \geq 12$

$-\frac{y}{8} \geq 12$	Original inequality
$(-8)\left(-\frac{y}{8}\right) \leq (-8)12$	Multiply each side by –8; change ≥ to ≤.
$y \leq -96$	Simplify.

The solution is $\{ y \mid y \leq -96\}$.

Example 2: Solve $6x - 4 \leq 2x + 12$.

$6x - 4 \leq 2x + 12$	Original inequality
$6x - 4 - 2x \leq 2x + 12 - 2x$	Subtract $2x$ from each side.
$4x - 4 \leq 12$	Simplify.
$4x - 4 + 4 \leq 12 + 4$	Add 4 to each side.
$4x \leq 16$	Simplify.
$\frac{4x}{4} \leq \frac{16}{4}$	Divide each side by 4.
$x \leq 4$	Simplify.

The solution is $\{x \mid x \leq 4\}$.

Solve each inequality.

31. $x - 3 > 7$

32. $-6x > -72$

33. $-3x + 7 \geq 43$

Section 7. Solving Equations involving Absolute Value

Absolute Value Equations When solving equations that involve absolute value, there are two cases to consider.

Case 1: The value inside the absolute value symbols is positive.
Case 2: The value inside the absolute value symbols is negative.

Example 1: Solve $|x+4|=1$. Then graph the solution set.

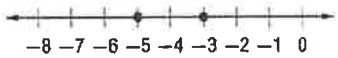
Write $|x+4|=1$ as $x+4=1$ or $x+4=-1$.

$x+4=1$ or $x+4=-1$

$x+4-4=1-4$ $\quad$ $x+4-4=-1-4$

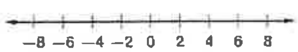
$x=-3$ $\quad$ $x=-5$

The solution set is $\{-5,-3\}$.
The graph is shown below.

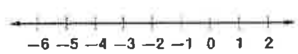


Solve each absolute value equation and graph the solution.

34. $|b+2|=3$



35. $|w-2|=5$



Section 8. Proportions

Solve Proportions If a proportion involves a variable, you can use cross products to solve the proportion. In the proportion $\frac{x}{5} = \frac{10}{13}$, x and 13 are called **extremes.** They are the first and last terms of the proportion. 5 and 10 are called **means**. They are the middle terms of the proportion. In a proportion, the product of the extremes is equal to the product of the means.

Means-Extremes Property of Proportions	If $\frac{a}{b} = \frac{c}{d}$ and $b, d \neq 0$, then $ad = bc$.

Example 2: Solve $\frac{x}{5} = \frac{10}{13}$.

$\frac{x}{5} = \frac{10}{13}$	Original proportion
$13(x) = 5(10)$	Cross products
$13x = 50$	Simplify.
$\frac{13x}{13} = \frac{50}{13}$	Divide each side by 13.
$x = 3\frac{11}{13}$	Simplify.

Solve the proportion for x.

36. $\frac{4}{6} = \frac{8}{x}$

37. $\frac{x+1}{4} = \frac{3}{4}$

Section 9. The Percent Proportion

A **percent** is a ratio that compares a number to 100l. To write a percent as a fraction, express the ratio as a fraction with a denominator of 100. Fractions should be expressed in simplest form.

Example 1. Express each percent as a fraction.

a. $24\% = \frac{25}{100} = \frac{1}{4}$

b. $0.5\% = \frac{0.5}{100} = \frac{5}{1000} = \frac{1}{200}$

c. $110\% = \frac{110}{100} = \frac{11}{10}$

Example 2. The Percent Proportion

a. What number is 50% of 68?

$\frac{x}{68} = \frac{50}{100}$

100x = 50 (68) Cross Multiply
x = 34

b. 25% of what number is 14?

$\frac{14}{x} = \frac{25}{100}$

25x = 14 (100) Cross Multiply
x = 52

c. 16 is what percent of 64?

$\frac{16}{64} = \frac{x}{100}$

64x = 16 (100) Cross Multiply
x = 25 %

Express each percent as a fraction.

38. 79%

39. 0.25 %

40. 130%

Use the Percent Proportion to solve each Problem.

41. What number is 25% of 18?

42. 50% of what number is 80?

43. 25 is what percent of 125?

Section 10. Finding and Interpreting Slope

Find Slope The **slope** of a line is the ratio of change in the *y*-coordinates (rise) to the change in the *x*-coordinates (run) as you move in the positive direction.

Slope of a Line	$m = \frac{rise}{run}$ or $m = \frac{y_2 - y_1}{x_2 - x_1}$, where (x_1, y_1) and (x_2, y_2) are the coordinates of any two points on a nonvertical line

Example 1: Find the slope of the line that passes through (–3, 5) and (4, –2).

Let $(-3, 5) = (x_1, y_1)$ and $(4, -2) = (x_2, y_2)$.

$m = \frac{y_2 - y_1}{x_2 - x_1}$	Slope formula
$= \frac{-2-5}{4-(-3)}$	$y_2 = -2$, $y_1 = 5$, $x_2 = 4$, $x_1 = -3$
$= \frac{-7}{7}$	Simplify.
$= -1$	

Example 2: Find the value of *r* so that the line through (10, *r*) and (3, 4) has a slope of $-\frac{2}{7}$.

$m = \frac{y_2 - y_1}{x_2 - x_1}$	Slope formula
$-\frac{2}{7} = \frac{4-r}{3-10}$	$m = -\frac{2}{7}$, $y_2 = 4$, $y_1 = r$, $x_2 = 3$, $x_1 = 10$
$-\frac{2}{7} = \frac{4-r}{-7}$	Simplify.
$-2(-7) = 7(4 - r)$	Cross multiply.
$14 = 28 - 7r$	Distributive Property
$-14 = -7r$	Subtract 28 from each side.
$2 = r$	Divide each side by –7.

Find the slope of the line that passes through each pair of points.

44. (2, 1), (8, 9)

45. (14, –8), (7, –6)

Find the value of *r* so the line that passes through each pair of points has the given slope.

46. $(r, 4), (7, 1), m = \frac{3}{4}$

47. $(7, 5), (r, 9), m = 6$

Section 11. Writing Equations of Lines

Forms of Linear Equations

Slope-Intercept Form	$y = mx + b$	m = slope; b = y-intercept
Point-Slope Form	$y - y_1 = m(x - x_1)$	m = slope; (x_1, y_1) is a given point
Standard Form	$Ax + By = C$	$A \geq 0$, A and B are not both zero, and A, B, and C are integers with a greatest common factor of 1.

Write an Equation Given the Slope and a Point

Example 1: Write an equation of the line that passes through (–4, 2) with a slope of 3.

The line has slope 3. To find the y-intercept, replace m with 3 and (x, y) with (–4, 2) in the slope-intercept form. Then solve for b.

$y = mx + b$	**Slope-intercept form**
$2 = 3(-4) + b$	$m = 3$, $y = 2$, and $x = -4$
$2 = -12 + b$	Multiply.
$14 = b$	Add 12 to each side.

Therefore, the equation is $y = 3x + 14$.

Write an Equation Given Two Points

Example2: Write an equation of the line that passes through (1, 2) and (3, –2).

Find the slope m. To find the y-intercept, replace m with its computed value and (x, y) with (1, 2) in the slope-intercept form. Then solve for b.

$m = \frac{y_2 - y_1}{x_2 - x_1}$	**Slope formula**
$m = \frac{-2 - 2}{3 - 1}$	$y_2 = -2$, $y_1 = 2$, $x_2 = 3$, $x_1 = 1$
$m = -2$	Simplify.
$y = mx + b$	**Slope-intercept form**
$2 = -2(1) + b$	Replace m with –2, y with 2, and x with 1.
$2 = -2 + b$	Multiply.
$4 = b$	Add 2 to each side.

Therefore, the equation is $y = -2x + 4$.

Example 3: Write an equation in point-slope form for the line that passes through (6, 1) with a slope of $-\frac{5}{2}$.

$y - y_1 = m(x - x_1)$	**Point-slope form**
$y - 1 = -\frac{5}{2}(x - 6)$	$m = -\frac{5}{2}$; $(x_1, y_1) = (6, 1)$

Therefore, the equation is $y - 1 = -\frac{5}{2}(x - 6)$.

Example 4: Write $y + 5 = \frac{2}{3}(x - 6)$ in standard form.

$y + 5 = \frac{2}{3}(x - 6)$	Original equation
$3(y + 5) = 3\left(\frac{2}{3}\right)(x - 6)$	Multiply each side by 3.
$3y + 15 = 2(x - 6)$	Distributive Property
$3y + 15 = 2x - 12$	Distributive Property
$3y = 2x - 27$	Subtract 15 from each side.
$-2x + 3y = -27$	Add $-2x$ to each side.
$2x - 3y = 27$	Multiply each side by –1.

Therefore, the standard form of the equation is $2x - 3y = 27$.

Write an equation of the line that passes through the given point and has the given slope.

45. (–1, –3); slope 5

49. (4, –5); slope $-\frac{1}{2}$

Write an equation of the line that passes through each pair of points.

50. (10, –1), (4, 2)

51. (–14, –2), (7, 7)

Write an equation in point-slope form for the line that passes through each point with the given slope.

52. (2, 1), $m = 4$

53. (–7, 2), $m = 6$

Write each equation in standard form.

54. $y + 2 = -3(x - 1)$

55. $y - 1 = -\frac{1}{3}(x - 6)$

Section 12. Graphing Lines

Slope-Intercept Form

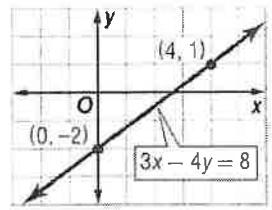
Slope-Intercept Form	$y = mx + b$, where m is the slope and b is the y-intercept

Example 1: Write an equation in slope-intercept form for the line with a slope of –4 and a *y*-intercept of 3.

$y = mx + b$ — Slope-intercept form

$y = -4x + 3$ — Replace m with –4 and b with 3.

Example 2: Graph $3x - 4y = 8$.



$3x - 4y = 8$ — Original equation

$-4y = -3x + 8$ — Subtract $3x$ from each side.

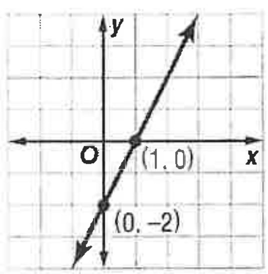
$\frac{-4y}{-4} = \frac{-3x + 8}{-4}$ — Divide each side by –4.

$y = \frac{3}{4}x - 2$ — Simplify.

The y-intercept of $y = \frac{3}{4}x - 2$ is –2 and the slope is $\frac{3}{4}$. So graph the point (0, –2). From this point, move up 3 units and right 4 units. Draw a line passing through both points.

Write an equation in slope-intercept form for each graph shown.

56.



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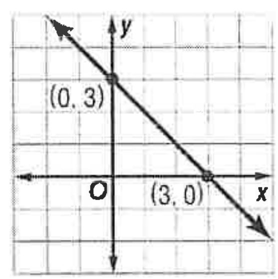
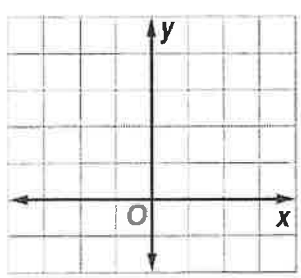
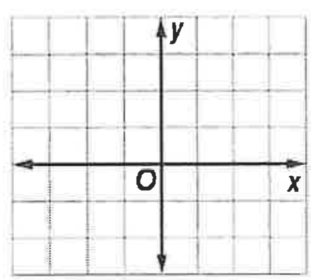


Graph each equation.

58. $y = 2x + 1$



59. $y = -3x + 2$



Section 13. Exponents

Multiply Monomials A **monomial** is a number, a variable, or the product of a number and one or more variables with nonnegative integer exponents. An expression of the form x^n is called a **power** and represents the product you obtain when x is used as a factor n times. To multiply two powers that have the same base, add the exponents.

Product of Powers	For any number a and all integers m and n, $a^m \cdot a^n = a^{m+n}$.
Power of a Power	For any number a and any integers m and p, $(a^m)^p = a^{mp}$.
Power of a Product	For any numbers a and b and any integer m, $(ab)^m = a^m b^m$.

Divide Monomials To divide two powers with the same base, subtract the exponents.

Quotient of Powers	For all integers m and n and any nonzero number a, $\frac{a^m}{a^n} = a^{m-n}$.
Power of a Quotient	For any integer m and any real numbers a and b, $b \neq 0$, $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$.

Negative Exponents Any nonzero number raised to the zero power is 1; for example, $(-0.5)^0 = 1$. Any nonzero number raised to a negative power is equal to the reciprocal of the number raised to the opposite power; for example, $6^{-3} = \frac{1}{6^3}$. These definitions can be used to simplify expressions that have negative exponents..

Zero Exponent	For any nonzero number a, $a^0 = 1$.
Negative Exponent Property	For any nonzero number a and any integer n, $a^{-n} = \frac{1}{a^n}$ and $\frac{1}{a^{-n}} = a^n$.

The simplified form of an expression containing negative exponents must contain only positive exponents.

Example: Simplify $\frac{4a^{-3}b^6}{16a^2b^6c^{-5}}$. Assume that no denominator equals zero.

$\frac{4a^{-3}b^6}{16a^2b^6c^{-5}} = \left(\frac{4}{16}\right)\left(\frac{a^{-3}}{a^2}\right)\left(\frac{b^6}{b^6}\right)\left(\frac{1}{c^{-5}}\right)$ Group powers with the same base.

$= \frac{1}{4}(a^{-3-2})(b^{6-6})(c^5)$ Quotient of Powers and Negative Exponent Properties

$= \frac{1}{4}a^{-5}b^0c^5$ Simplify.

$= \frac{1}{4}\left(\frac{1}{a^5}\right)(1)c^5$ Negative Exponent and Zero Exponent Properties

$= \frac{c^5}{4a^5}$ Simplify.

The solution is $\frac{c^5}{4a^5}$.

Simplify each expression. Assume that no denominator equals zero.

60. $(-7x^2)(x^4)$

61. $(4x^2b)^3$

62. $\frac{m^6}{m^4}$

63. $\left(\frac{2a^2b}{a}\right)^3$

64. $\frac{x^4y^0}{x^{-2}}$

65. $\frac{m}{m^{-4}}$

Section 14. Scientific Notation

Scientific Notation Very large and very small numbers are often best represented using a method known as **scientific notation**. Numbers written in scientific notation take the form $a \times 10^n$, where $1 \leq a < 10$ and n is an integer. Any number can be written in scientific notation.

Example 1: Express 34,020,000,000 in scientific notation.	Example 2: Express 4.11×10^{-6} in standard notation.
Step 1 Move the decimal point until it is to the right of the first nonzero digit. The result is a real number a. Here, $a = 3.402$. **Step 2** Note the number of places n and the direction that you moved the decimal point. The decimal point moved 10 places to the left, so $n = 10$. **Step 3** Because the decimal moved to the left, write the number as $a \times 10^n$. $34{,}020{,}000{,}000 = 3.4020000000 \times 10^{10}$ **Step 4** Remove the extra zeros. 3.402×10^{10}	**Step 1** The exponent is -6, so $n = -6$. **Step 2** Because $n < 0$, move the decimal point 6 places to the left. $4.11 \times 10^{-6} \Rightarrow .00000411$ **Step 3** $4.11 \times 10^{-6} \Rightarrow 0.00000411$ Rewrite; insert a 0 before the decimal point.

Express each number in scientific notation.

66. 5,100,000

67. 0.0049

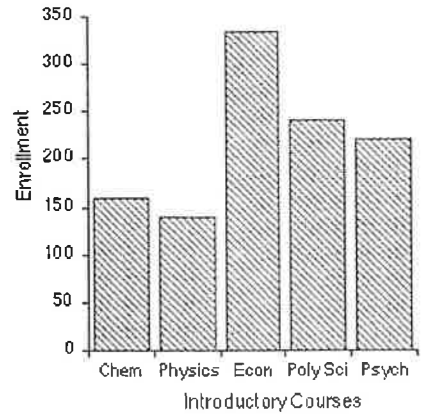
Express each number in standard form.

68. 4.91×10^4

69. 3.2×10^{-5}

Section 14. Interpreting Graphs

70. The bar graph compares the number of students enrolled in classes.

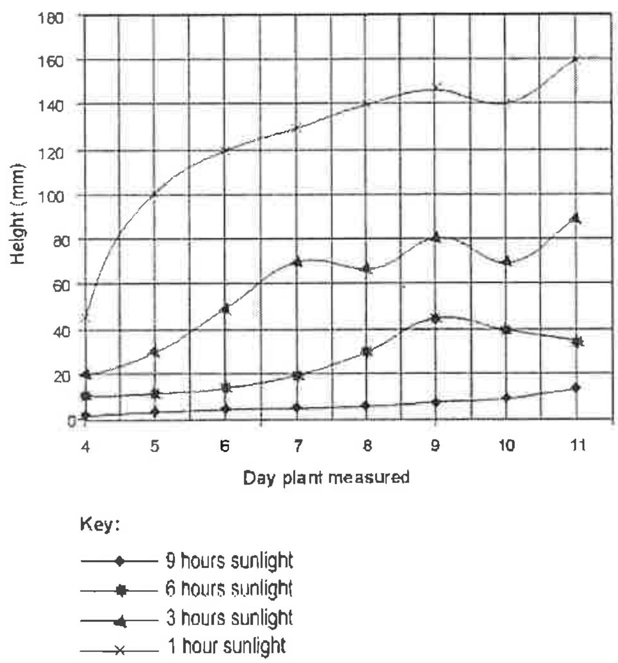


a) What class has the highest enrollment? ________

b) How many students are enrolled in Chemistry (chem.) _____

c) How many are enrolled in Psychology (Psych)? _______

71. This line graph compares the growth of plants that were kept in the sun for different amounts of time.



a) On Day 7, the plants kept in the sun for 3 hours were how tall? _________

b) On Day 7, the plants kept in the sun for 6 hours were how tall? _________

c) On Day 10, the plants kept in the sun for 9 hours were how tall? ________

d) On Day 10, the plants kept in the sun for 6 hours were how tall? ________

e) Based on the graph, the plant grows best in what amount of sunlight? __________

72. The line graph shows the number of worms collected and their lengths.

a) What length of worm is most common?

____

b) What was the longest worm found?

____

c) How many worms were 6 cm long?

____

d) How many worms were 7.25 cm long?

____

e) The peak of the curve represents the

[circle one: longest worms / average worms]