

All Honors Algebra II/Trig.
SUMMER HOMEWORK!!!

1. Please do all work on a separate sheet of paper.
2. For each problem, copy the original problem, show all necessary work, and BOX the answer.
3. Keep your work organized and understandable. Make clear divisions between each problem set.
4. This is a review of skills that will be necessary for Honors Algebra 2 Trig. It is highly recommended that you complete it.

Good luck and enjoy your summer!

Mrs. Noyes

Problem set 1

Add, subtract, multiply, or divide without a calculator.

$$1) \frac{3}{4} + \frac{-5}{8} \quad 2) \frac{-7}{12} \div \frac{2}{3} \quad 3) 4 - \frac{4}{5} \quad 4) \frac{\frac{5}{8}}{8}$$

$$5) \frac{-1}{4} \cdot 20 \quad 6) \frac{\frac{5}{7}}{7} \quad 7) \frac{7}{9} - 3 \quad 8) \frac{4}{5} - \frac{2}{3}$$

Problem set 2

Follow the Order of Operations when evaluating. Remember “Please Excuse My Dear Aunt Sally.”

P (lease) – do operation which appear within parentheses or other grouping symbols.

E (xcuse) – evaluate expressions with exponents

M (y) D (ear)- do multiplication and division from left to right

A (unt) S (ally) – do addition and subtraction from left to right

Evaluate the expression.

$$1) -7 + 2^3 - 9 \quad 2) 18 \div [(4 - 7) + 5] \quad 3) \frac{3}{4} \cdot 24 + 4^2 - 1 \quad 4) 156 - 3^2 \cdot 5 - 8^2$$

$$5) \frac{5 + 7 \cdot 3}{6 + 7} \quad 6) \frac{2 - 9}{8 - 8^2} \quad 7) 9((7 - 2))^2 \quad 8) [(1 - 7)^2 + 4] \div 8$$

Evaluate the expression when $x = -4$ and $y = 3$

$$9) -3x^2 \quad 10) xy \div (x + y) \quad 11) x^2 - x + 5 \quad 12) -2x^2 + y^2$$

$$13) -2(x + 4y^2) \quad 14) 5(2y - x) \quad 15) 20 - \frac{16}{x} \quad 16) \frac{x + 2}{x - 2}$$

Problem set 3

Simplify the expression.

- 1) $6x - 9x + x$ 2) $\frac{1}{5}d + \frac{2}{7}d$ 3) $18g^3 + 9g^2 + g^3$ 4) $6h - 3h(h + 1)$
- 5) $9k - 2(3k - 5) - 10$ 6) $5(r + 1) - (r - 3)$ 7) $x(2x - 6) + x^2$
- 8) $2(n + 8) + 3n(n - 5)$

Problem set 4

- 1) During the month of May, Rosa made deposits of \$128.50 and \$165.19 into her checking account. She wrote checks for \$55.12, \$25, and \$83.98. If her account balance at the end of May was \$327.05, what was her balance at the beginning of May?
- 2) You make 20 silk flower arrangements and plan to sell them at a craft show. Each flower arrangement cost \$12 in materials, and your booth at the craft show cost \$30. If you sell the arrangements for \$24 each, how many must you sell to make at least \$100 profit?
- 3) A store sells sweatshirts in small, medium, large, and extra large. A customer can choose a long sleeve sweatshirt or sweatshirt with a hood. There are four choices of colors: White, blue, gray, and black. How many different kinds of sweatshirts are available at the store?
- 4) If 4.26 lb of chicken cost \$6.77, what would 3.75 lb of chicken cost?
- 5) Roger bought some 33¢ stamps and some 20¢ stamps, and spent \$4.50. How many of each type of stamp did he buy?

Problem set 5

Solve the equation:

1) $3y - 4 = 20$

2) $\frac{c}{7} + 2 = 1$

3) $7(b - 3) + 8b = 2$

4) $22d - (6 + 2d) = 4$

5) $\frac{3+m}{2} = 5$

6) $104 = \frac{1}{2}[(360 - x) - x]$

7) $85 = \frac{1}{2}(226 - x)$

8) $18(x + 18) = 21^2$

9) $s - (-4s + 2) = 13$

10) $\frac{x + (-2)}{2} = -6$

Problem set 6

Solve the inequality:

1) $16 + x > 21$

2) $x + \frac{7}{2} > \frac{11}{2}$

3) $x + 3x > 2x + 6$

4) $(2x - 1) + (x + 3) > 18 - x$

5) $(x + 4) + (x + 6) > 3x - 1$

6) $6.2x - 3.7 < -14$

Problem set 7

Use the slope and the y-intercept to graph the equation. Please either put on graph paper or NEATLY draw the graph.

1) $y = \frac{1}{2}x - 4$

2) $x - y - 3 = 0$

3) $2x + 3y = -9$

4) $-y - 3x = 4$

5) Graph the equation $x = -2$. Explain why the graph has no slope and no y-intercept.

6) Graph the equation $y = 3$. Find the slope of the graph. Name three different ordered pairs that are solutions of the graph.

Problem set 8

Write an equation in slope-intercept form of the line that passes through the given points.

1) (1, 3), (7, 4)

2) (0, -3), (-5, 0)

3) (11, -1), (-1, -7)

4) (1.4, 2.7), (3.9, 1.1)

5) (0, 11), (16, 87)

6) (0.5, 2), (-1.25, 0.5)

Problem set 9

Use substitution to solve the system of linear equations.

1) $9x + 4y = 3$
 $x + 8y = 6$

2) $3x + 5y = -8$
 $4x - y = -3$

3) $x - .5y = 6$
 $0.5x + 0.2y = 8$

4) $3x + y = 6$
 $5(x + y) = 22$

Use linear combination to solve the system of linear equations.

5) $4x - 5y = 18$
 $3x + 10y = -3$

6) $7x + y = 8.5$
 $-4x - 3y = -3$

7) $3x - 2y = -6$
 $7x - 6y = 12$

8) $8x + 7y = 56$
 $7x + 3y = 45$

Problem set 10

Product of powers: $a^m \bullet a^n = a^{m+n}$

Power of a power: $(a^m)^n = a^{mn}$

Power of a product: $(ab)^m = a^m b^m$

Quotient of powers: $\frac{a^m}{a^n} = a^{m-n}$

Power of a quotient: $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$

If $a \neq 0$, $a^0 = 1$

If $a \neq 0$, $a^{-n} = \frac{1}{a^n}$

Simplify the expression. The simplified expression should have no negative exponents.

1) $\left(\frac{-2}{3}\right)^3$

2) $\left((3 \cdot a^2 \cdot 6)\right)^2$

3) $(8^{(-1)})^{(-3)}$

4) $2n^4 \cdot (3n)^2$

5) $\left(\frac{x^4}{x^3}\right)^2$

6) $\left(\frac{r}{3s}\right)^{(-3)}$

7) $(5ab^3)^2 \cdot (-7b^2c)$

8) $w^5 \cdot \left(\frac{7}{w^4}\right)^2$

9) $4y^3z \cdot \left(\frac{y}{2z}\right)^{(-3)}$

10) $(3c^{(-4)}d^5)^{(-2)} \cdot 12cd^{(-4)}$

Problem set 11

Multiply and then simplify.

- 1) $(x + 1)(x + 1)$ 2) $(4b + 1)(2 + b)$ 3) $(3c + 3)(c - 1)$ 4) $(t + 3)(2t - 3)$
5) $(a + 5)(4a - 7)$ 6) $(5d + 3)(d - 2)$ 7) $(2f - 4)(2f + 4)$ 8) $(1 - 2g)(g + 3)$

Problem set 12

Quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Use the quadratic formula to solve for x:

- 1) $x^2 + 5x + 4 = 0$ 2) $x^2 + 6x = 0$ 3) $a^2 + 8 = 6a$
4) $-25 = x^2 + 10x$ 5) $3x^2 + 6x + 2 = 0$ 6) $4x^2 - 3x = 7$

Problem set 13

Factor completely:

- 1) $x^2 - 81$ 2) $x^2 - 4x + 4$ 3) $x^2 + x - 2$ 4) $x^2 + 5x + 6$
5) $3x + 6$ 6) $2x^2 - x - 1$ 7) $4t^2 + 4t + 4$ 8) $2x^3 - 6x$