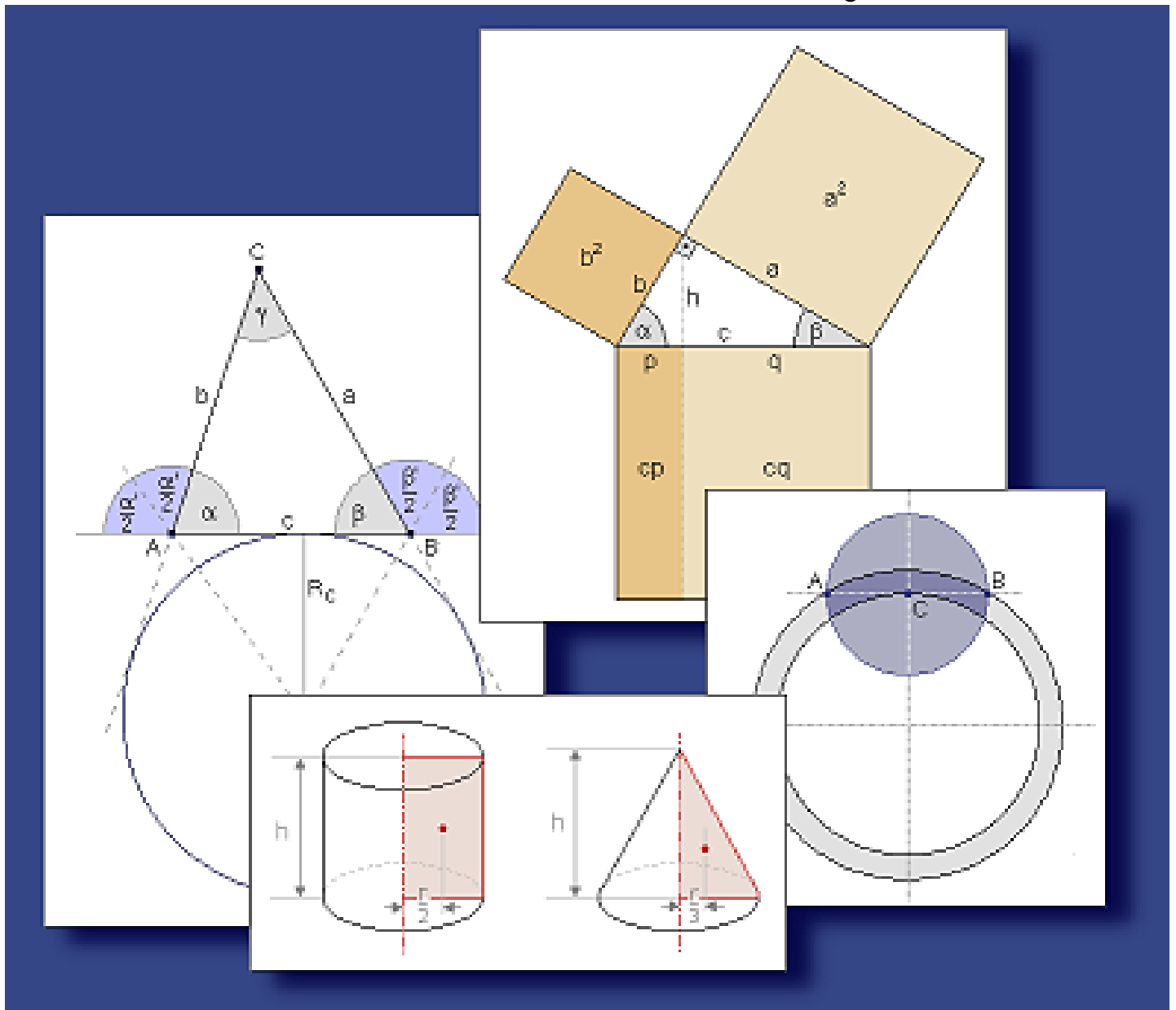


Northwest High School's Honors Geometry



Summer Math Packet DUE THE FIRST DAY OF SCHOOL

Student Name: _____

This packet has been designed to help you review various mathematical topics that will be necessary for your success in Honors Geometry.

Instructions:

DO ALL PROBLEMS WITHOUT A CALCULATOR.

Show all work that leads you to each solution on separate sheets of paper. You may use your notes from previous mathematics courses to help you. You must do all work without any help from another person.

Additional copies of this packet may be obtained from the Northwest High School website

<http://northwesths.net>

ALL work should be completed and ready to turn in on the FIRST DAY of school. This packet will count as part of your first quarter grade.

Due Date: August 30th, 2010

Deadline : September 7th, 2010

If you have questions regarding the summer math packet, please call Vic Weinstein at (301) 601-4651

ENJOY YOUR SUMMER!! WE ARE LOOKING FORWARD TO SEEING YOU IN THE FALL.

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Fractions

Simplify the following fractions:

1. $\frac{8}{24} =$

2. $\frac{21}{14} =$

3. $\frac{5}{20} =$

Write the following mixed numbers as improper fractions:

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

5. $-5\frac{7}{8} =$

6. $6\frac{3}{7} =$

Perform the indicated operation, and simplify if necessary:

7. $\frac{5}{4} + \frac{3}{4} =$

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

9. $\frac{6}{7} + \frac{3}{2} =$

10. $\frac{9}{2} + \frac{7}{5} =$

11. $\frac{15}{8} - \frac{12}{5} =$

12. $-\frac{3}{5} - \frac{2}{7} =$

13. $\frac{2}{3} \cdot \frac{5}{8} =$

14. $-\frac{5}{3} \cdot \frac{2}{5} =$

15. $\frac{4}{7} \cdot \frac{8}{3} =$

16. $\frac{1}{3} \div \frac{5}{2} =$

17. $\frac{1}{9} \div \frac{7}{8} =$

18. $-\frac{4}{5} \div \frac{1}{6} =$

19. $6 \cdot \frac{4}{5} =$

20. $15 \div \frac{3}{8} =$

21. $\frac{2}{7} \cdot 14 =$

Order of Operations

Evaluate each expression:

1. $3 + 7 * 5 - 2$

2. $24 - 2^2 * 7 - 5$

3. $2(5 + 3) - 5 * 4$

4. $-3(12 - 7) + 3^3$

5. $4[5(9 + 3) - 3(4 - 2)]$

6. $49 - (5 + 2)^2 + 14$

7. $\frac{1}{3}(2 + 4)^2$

8. $(7 - 9)^2 \div (5 + 4)^2$

9. $14 - (4^3 \div 16) * 5$

10. $(3 - 5)^3 \div 2(4 * 3)$

Proportions

Solve each proportion for the missing value:

1. $\frac{2}{3} = \frac{x}{12}$

2. $\frac{5}{y} = \frac{10}{14}$

3. $\frac{15}{5} = \frac{9}{n}$

4. $\frac{x+2}{2} = \frac{4}{3}$

5. $\frac{2}{0.4} = \frac{15}{t}$

6. $\frac{.21}{2} = \frac{4}{a}$

Solve for each problem below by using proportions.

- Sue was paid \$384 for working 32 hours. How many hours will she have to work to earn \$672 ?
- Tommy drove 238 miles in 5 hours. How long will it take him to travel the next 72 miles, if he continues at the same speed ? (Give your answer in minutes)
- Matt paid \$33.41 for 13 gallons of gasoline. How many gallons can he buy if he only has \$14 ?

Exponents

Simplify the following expressions:

1. $x^3 \cdot x^2$

2. $(x^4)^2$

3. $x^5 \div x^2$

4. $\frac{x^3 y^5}{x^4 y^2}$

5. $a^{-5} \cdot b^2$

6. $(2x^3)^2$

7. $\frac{15a^4 b^2 c^3}{5ac^5}$

8. $\left(\frac{2h^3}{3}\right)^2$

9. $t^4 \cdot t^2 \div t^7$

Solving Equations

Solve the following equations.

1. $7x - 17 = 60$

2. $5y - 13 = 37$

3. $\frac{r+8}{-3} = -2$

4. $3(x+2) = 18$

5. $-2 + 10x = 8x - 1$

6. $2(a - 3) + 5 = 3(a - 1)$

7. $3 + \frac{2}{5}y = 11 - \frac{2}{5}y$

8. $2[x + 3(x - 1)] = 18$

9. $1.03t - 4 = -2.15t + 8.72$

10. $-3(x + 5) = 8x + 18$

11. One half of a number increased by 16 is four less than two thirds of the number. Find the number.

12. Two times the sum of a number and eight is equal to the difference of ten and that number. Find the number.

Solving Equations II

Solve the following equations.

1. $-4y + 3y - 8 = 24$

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

3. $-4r + 5 - 6r = -32$

4. $\frac{x}{-3} + (-7) = 6$

5. $6x + (-3) = -12$

6. $\frac{y}{-2} + (-4) = 8$

7. $9 - 5(4-3) = -16 + \frac{x}{3}$

8. $6y - 14 - 3y = 8(7 - (-2))$

9. $4c + 5c - 8c = 13 + 6$

10. $3(7 + x) = 5(7 - (-4))$

Systems of Equations

Find the value of x, and y that satisfy each system of equations below.

$$1. \begin{cases} y = 4x \\ 3x + 2y = 44 \end{cases}$$

$$2. \begin{cases} 3x - 2y = 12 \\ x + 2y = 6 \end{cases}$$

$$3. \begin{cases} x = y + 2 \\ 5x + 3y = 18 \end{cases}$$

$$4. \begin{cases} 2x + y = 5 \\ x - y = 1 \end{cases}$$

$$5. \begin{cases} 2x = y + 3 \\ 4x - 2y = 12 \end{cases}$$

$$6. \begin{cases} y = 3x - 8 \\ y = 4 - x \end{cases}$$

7. The sum of three times a number and a second number is five. Two times the first number added to the second number is 10. Find the two numbers.

Factoring Quadratic Equations

Factor the following expressions.

1. $x^2 + 9x + 20$

2. $x^2 - 3x - 28$

3. $x^2 + 12 + 20$

4. $x^2 + 4x - 32$

5. $x^2 - 64$

6. $4x^2 - 25$

7. $2x^2 + 5x + 3$

8. $3x^2 - 3x - 6$

9. $8x^2 - 2x - 10$

10. $4x^2 + 8x + 3$

Solving Quadratic Equations

Solve the following quadratic equations by factoring.

1. $x^2 + 7x + 12 = 0$

2. $x^2 - 9x - 36 = 0$

3. $5x^2 = 5x + 60$

4. $x^2 - 81 = 0$

5. $7x^2 + 42x = 0$

6. $3x^2 - 3x = 3(x + 15)$

Solve the following equations by using the quadratic equation.

7. $2x^2 + 6x = 5$

8. $8x + 4 = 2x^2$

1. Divide 110 into two parts so that one will be 150 percent of the other. What are the 2 numbers?

2. Jennifer took a test that had 20 questions. The total grade was computed by awarding 10 points for each correct answer and deducting 5 points for each incorrect answer. Jennifer answered all 20 questions and received a score of 125. How many wrong answers did she have?

3. You have 55 coins totaling \$10.00. There are more nickels than pennies, more dimes than nickels, and more quarters than dimes. How many of each coin do you have?

4. If 3 salesman can sell three stoves in 7 minutes, how many stoves can six salesmen sell in seventy minutes?

5. What is the number that is 5 more than the number which is one-fifth of one-fifth of one-half of 1050?