

City of Brockton

BROCKTON PUBLIC SCHOOLS

Basan Nembirkow ♦ Superintendent of Schools

Robert Perkins, Department Head

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June 22, 2010

Dear Student/Parent,

The attached Math Packet is intended for students taking an Algebra II Class in the fall. The packet contains problems emphasizing necessary skills for the student beginning this course. While completion of these problems is optional, it is important to note that if you complete this packet successfully you will be eligible for up to 5 points extra credit on your term I average.

You may seek help on the problems. It is hoped that you will do whatever is necessary to complete all of the problems successfully. You must submit the answer sheet (which details the problems that must be done) and your work on separate sheets of paper. The answer sheet and work should be stapled together and submitted to your teacher on or before Tuesday, September 7, 2010. If you are in a second semester math class please return the completed packet to the Green Math Office by September 7, 2010. Late packets will not be accepted.

The following book references can be used to find information to help you complete these problems. You may also access any other sites or other means of help.

Go to www.Math.glencoe.com and use the appropriate user name and password.

Algebra I user name: ALG1 password: wRec84ched

Geometry user name: GEO password: v7tr2SwAgU

Algebra II user name: ALG2 password: N4c6abrada

Advanced Math (Pre-Calculus) user name: AMC password: Zaye9uB7ze

Good luck in completing this work. Remember while it is optional, it is an opportunity for all students to take a step in improving their term I grade and to review some important math skills at the same time.

Thanks,

Bob Perkins

Name _____

Completeness Score: _____

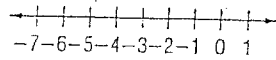
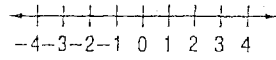
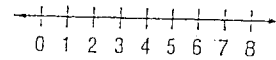
Accuracy Score: _____

Chapter 1

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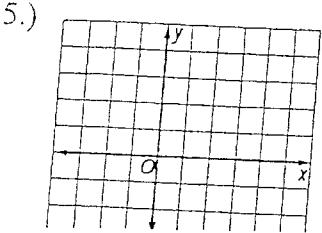
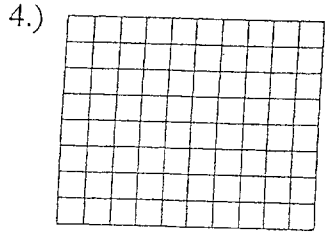
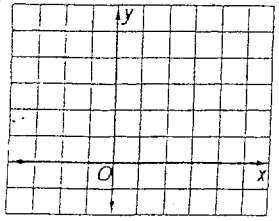
Chapter 1 Cumulative Review

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Chapter 2

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Chapter 2 Cumulative Review

Chapter 3

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1.) _____

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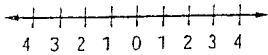
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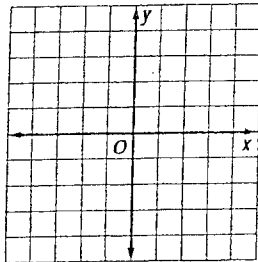
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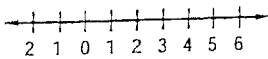
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Chapter 3 Cumulative Review

1.) _____

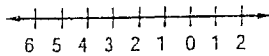
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Chapter 5

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Chapter 1

Simplify each expression.

1.) $(7 - 2.1x)3 + 2(3.5x - 6)$

2.) $50(3a - b) - 20(b - 2a)$

3.) $\frac{3}{4}p - \frac{1}{5}r - \frac{3}{5}r - \frac{1}{2}p$

4.) $\frac{1}{5}(4j + 2k - 6j + 3k)$

5.) $8(2.4r - 3.1s) - 6(1.5r + 2.4s)$

6.) $1.2(7x - 5) - (10 - 4.3x)$

Solve each equation. Check your solutions.

7.) $|x - 5| = 45$

8.) $5n + 24 = |8 - 3n|$

9.) $|5b + 9| + 16 = 2$

10.) $\frac{1}{3}|4p - 11| = p + 4$

11.) $5f - |3f + 4| = 20$

12.) $\left| \frac{1}{3}x + 3 \right| = -1$

Chapter 1 Cumulative Review

1. Simplify $\left(-7\frac{1}{5}\right) \div \frac{1}{5}$

(Prerequisite Skill)

2. Evaluate $(-0.7)^2$.

(Prerequisite Skill)

1. _____

2. _____

For Questions 3 and 4, find the value of each expression.

3. $4 \cdot 6 \div 3 + 12$

(Lesson 1-1)

4. $19 - [(6 + 24) - 7 \cdot 2^2]$

(Lesson 1-1)

3. _____

4. _____

5. Use the formula $F = \frac{9}{5}C + 32$ to find the value of F if $C = 25$.

(Lesson 1-1)

5. _____

6. Name the sets of numbers to which the number 13 belongs.

(Lesson 1-2)

6. _____

7. Simplify $\frac{1}{4}(16x - 12) + \frac{1}{3}(9x + 3)$. (Lesson 1-2)

7. _____

8. Write an algebraic expression to represent the verbal expression *the square of a number increased by the cube of the same number*. (Lesson 1-3)

8. _____

Solve each equation.

9. $12x - 51 = 3(x + 7)$

(Lesson 1-3)

10. $|2y - 1| + 4 = 13$

(Lesson 1-4)

9. _____

10. _____

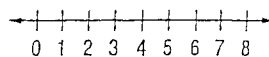
11. $-5(m - 5) = 3(10 - 2m) + m$ (Lesson 1-3)

11. _____

Solve each inequality. Graph the solution set.

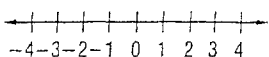
12. $4(t - 5) \geq 5 - t$ (Lesson 1-5)

12. _____



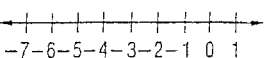
13. $3x + 5 \leq -10$ or $12 - x < 20$ (Lesson 1-6)

13. _____



14. $|x + 3| \geq 4$ (Lesson 1-6)

14. _____



Define a variable, write an equation, and solve the problem.

16. Forty-eight decreased by three times a number is thirty-six.

Find the number. (Lesson 1-3)

16. _____

Define a variable and write an inequality. Then solve.

17. The Cincinnati Reds play 162 games in a season. So far they have won 57 games. How many more games must they win in order to win at least 65% of all games for the season?

17. _____

Chapter 2

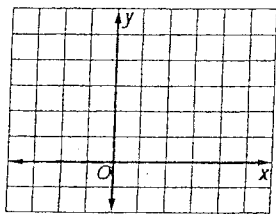
Find the slope of the line that passes through each pair of points.

1. $(-7, -6), (3, -6)$

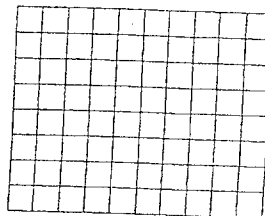
2. $(4, 3), (7, -2)$

Graph the line passing through the given point with the given slope.

3.) $(2, 1), m = -\frac{3}{4}$

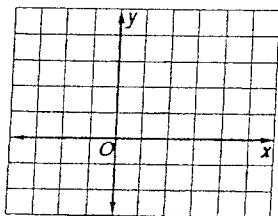


4.) $(0, 2), m = 0$



Graph the line that satisfies each set of conditions.

5. passes through $(3, 0)$, perpendicular to a line whose slope is $\frac{3}{2}$



DEPRECIATION For Exercises 13–15, use the following information.

A machine that originally cost \$15,600 has a value of \$7500 at the end of 3 years. The same machine has a value of \$2800 at the end of 8 years.

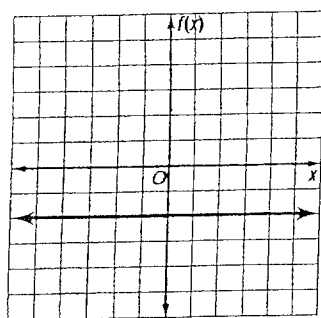
6. Find the average rate of change in value (depreciation) of the machine between its purchase and the end of 3 years.

7. Find the average rate of change in value of the machine between the end of 3 years and the end of 8 years.

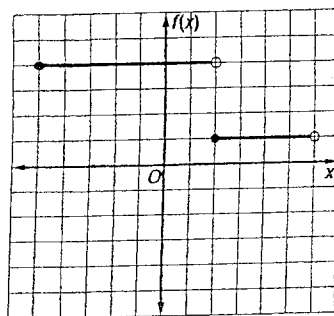
8. Interpret the sign of your answers.

Identify each function as a constant function, the identity function, a greatest integer function, or a step function.

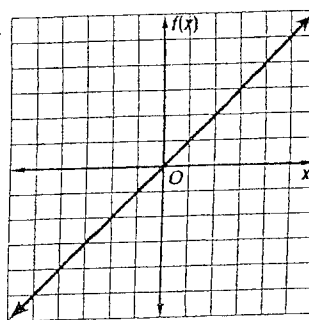
9.

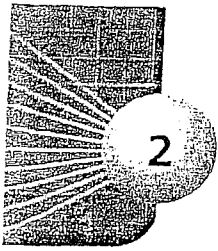


10.



11.





NAME _____ DATE _____ PERIOD _____

2 Chapter 2 Cumulative Review

(Chapters 1 and 2)

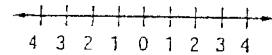
1. Evaluate $\frac{7a - 2c}{a^2 + b}$ if $a = 3$, $b = 2$, and $c = 5$. (Lesson 1-1) 1. _____

2. Name the sets of numbers to which -42.1 belongs. (Lesson 1-2) 2. _____

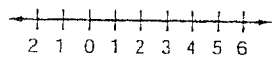
3. Solve $3|7 - a| = 12$. Check each solution. (Lesson 1-4) 3. _____

For Questions 4 and 5, solve each inequality. Graph the solution set.

4. $2(3x - 1) \leq 5x - 3$ (Lesson 1-5) 4. _____



5. $-6 \leq 2(y - 1) < 10$ (Lesson 1-6) 5. _____



6. Find the domain and range of the relation. Then determine whether the relation is a function.
 $\{(4, -7), (3, -7), (2, 0), (4, 0)\}$ (Lesson 2-1) 6. _____

7. Find $f(-7)$ if $f(x) = 2x^2 - 3x$. (Lesson 2-1) 7. _____

8. Find the x -intercept and the y -intercept of the graph of $3x - 4y = 8$. (Lesson 2-2) 8. _____

9. Find the slope of the line whose graph is perpendicular to the graph of $2x - 5y = 7$. (Lesson 2-3) 9. _____

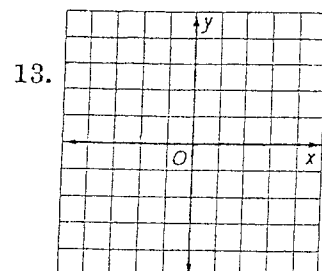
10. Write an equation in slope-intercept form for the line that has a slope of -4 and passes through $(3, -5)$. (Lesson 2-4) 10. _____

11. The prediction equation $y = 5.92x + 119.21$ models the median selling price, in thousands of dollars, of new homes in a certain area since 1995. Predict the median selling price in 2015. (Lesson 2-5) 11. _____

12. Identify the domain and range of the piecewise function 12. _____

$$h(x) = \begin{cases} x + 5 & \text{if } x \leq -2 \\ -4x & \text{if } x > -2 \end{cases} \quad (\text{Lesson 2-6})$$

13. Graph $y > -\frac{4}{5}x + 1$. (Lesson 2-7)

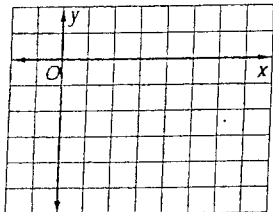


Chapter 3

Solve each system of equations by graphing.

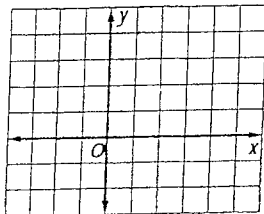
1. $y = -\frac{x}{3} + 1$

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



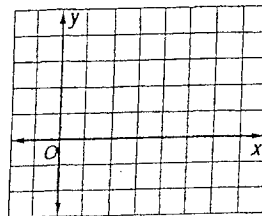
2. $y = 2x - 2$

$y = -x + 4$



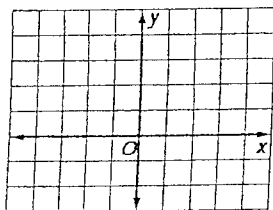
3. $y = -\frac{x}{2} + 3$

$y = \frac{x}{4}$



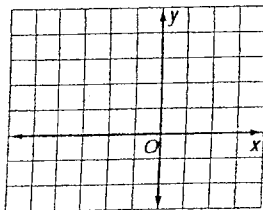
4. $3x - y = 0$

$x - y = -2$



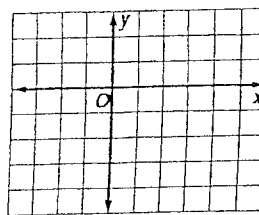
5. $2x + \frac{y}{3} = -7$

$\frac{x}{2} + y = 1$



6. $\frac{x}{2} - y = 2$

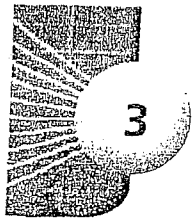
$2x - y = -1$



Solve each system of linear equations by using substitution.

7. $\begin{cases} 3x + y = 7 \\ 4x + 2y = 16 \end{cases}$

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



3 Chapter 3 Cumulative Review

(Chapters 1-3)

1. Simplify $\frac{1}{3}(6x - 21) - 4(x + 5)$. (Lesson 1-2)

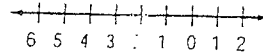
1. _____

2. Solve $7 - 2(m + 3) = 4 - m$. (Lesson 1-3)

2. _____

3. Solve the inequality $|3 + 2x| > 7$. Then graph the solution set. (Lesson 1-6)

3. _____



4. Find $f(2a)$ if $f(x) = -x^3 + 2x - 5$. (Lesson 2-1)

4. _____

For Questions 5 and 6, state whether each equation or function is linear. If not, explain. (Lesson 2-2)

5. $f(x) = \frac{1}{x} + 5$

6. $y + x^2 = 2$

5. _____

6. _____

7. Write an equation for the line that passes through $(2, -3)$ and is parallel to the line whose equation is $y = -4x + 3$. (Lesson 2-4)

7. _____

8. Evaluate $f\left(\frac{1}{8}\right)$ if $f(x) = 5 - 3x$. (Lesson 2-6)

8. _____

9. Describe the system of equations as *consistent and independent*, *consistent and dependent*, or *inconsistent*.
 $2x - 3y = 11$
 $4x + 6y = 22$ (Lesson 3-1)

9. _____

10. Solve the system of equations by using substitution.
 (Lesson 3-2)

$y = 2x + 5$
 $4x - 5y = -1$

10. _____

11. Solve the system of equations by using elimination.
 (Lesson 3-2)

$y - 3x = 5$
 $4x - 9y = -22$

11. _____

For Questions 12 and 13, use the system of inequalities $x \geq 1$, $y \geq -2$, and $x + y \leq 4$.

12. Find the coordinates of the vertices of the figure formed by the system of inequalities. (Lesson 3-3)

12. _____

13. Find the maximum and minimum values of the function $f(x, y) = y - 3x$ for the feasible region. (Lesson 3-4)

13. _____

14. Solve the system of equations.
 (Lesson 3-5)

$2x + y - 3z = 9$
 $x - 2y + z = -8$
 $x + 3y - 2z = 11$

14. _____

Chapter 5

Determine whether each expression is a polynomial. If it is a polynomial, state the degree.

1. $x^2 + 2x + 2$

2. $\frac{b^2c}{d^4}$

3. $8xz + \frac{1}{2}y$

Simplify.

4. $(x^2 - 3x - 3) + (2x^2 + 7x - 2)$

5. $(2x^2 - 3xy) - (3x^2 - 6xy - 4y^2)$

6. $(3 - 2b)(3 + 2b)$

7. $(c + 2)(c + 8)$

8. $-5(2c^2 - d^2)$

9. $(2x - 3)(3x - 5)$

10. $8w(hk^2 + 10h^3m^4 - 6k^5w^3)$

Simplify. Assume that no denominator is equal to 0.

$$11. \frac{3x^2 + 4x - 15}{2x^2 + 3x - 9}$$

$$12. \frac{x^2 - 14x + 49}{x^2 - 2x - 35}$$

$$13. \frac{x^2 - 81}{2x^2 - 23x + 45}$$

$$14. \frac{7x^2 + 11x - 6}{x^2 - 4}$$