

## Study Strategies for Exams

Pay particular attention to any study guides that the instructor hands out in class before the exam, or even at the beginning of the course! For example: key points, particular chapters or parts of chapters, handouts, etc.

Practice your test-taking by asking the professor for old tests and/or using questions in review books (hopefully you saved your old quizzes and tests). Look for challenging, analytical questions. After completing a practice test, think about the reasons for any errors.

Besides asking what material will be on the test, ask what material will NOT be on the exam. Studying the wrong content is just as bad as not studying.

Try to predict test questions. Ask other students what they think will be on the test. Remember, the #1 problem point on any exam is not being prepared for a question.

Be serious about studying the course material – aiming for a deep level of understanding – but approach the test as a game for which you need good test-taking strategies. These strategies will help you get the maximum mileage out of what you know.

Spend a few minutes going over the notes you took each day – filling in gaps, clarifying points, thinking about the major concepts. After a brief notes review, focus on problems or questions.

Space out your study sessions. Research indicates that you will learn more if you study a topic for a short period on three separate occasions rather than studying for a longer period just once.

Don't just memorize!!! Most courses require that you do more than simply fill your head with isolated facts. Be sure to paraphrase ideas and relate one idea to another. For example, don't simply memorize each psychological theory in isolation; look for similarities and differences.

Study with another student or with a group. Try to explain what you've learned to your study partners or even to a relative who knows nothing about the subject. Having to verbalize ideas rather than simply reciting facts will help to deepen your understanding.

Decide what to learn for yourself!!! Narrow your focus. If you try to learn everything that might possibly be tested, you may spread yourself too thin and not be able to learn anything thoroughly.

Ask yourself what you would test if you were the professor. If a study guide, packet, or sample questions are provided use these to your advantage. There is

a reason why these were given to you!!!!

Spend more time working on problems than reviewing notes. If at all possible, try to turn your notes into questions themselves. For example, trying to memorize your notes on the causes of the Franco-Prussian War is not as helpful as answering the questions "What were the main causes of the FPW". Simply restating your notes in this way will not only help you with the content, but it will help you decide precisely how to word your response.

Develop summary sheets, charts, or diagrams to help with review. Be brief. You don't want to simply recopy your notes; you are trying to condense and paraphrase. One helpful tool is to try and condense all of your notes onto one page (front and back is ok too).

When making study guides, underline, star, highlight (with different colors), and box material often. Color coding, or breaking up the content, makes the material easier to remember. Instead of memorizing a bunch of black ink on a white page, you are helping your brain memorize chunks of color coded information that make recall during the test easier. (There is a reason why stop lights are red and green instead of just having light up 'Stop' and 'go' signs. Color stimulates the mind)

For math exams, your notes should include an example showing how to use key formulas and concepts. You are rarely asked to 'define' vocabulary or explain a concept on a math exam, so why would you just memorize the definitions?

Use flashcards sparingly. Some students spend hours making cards but don't allow enough time to actually use them. Cards can be useful for memorizing isolated facts (such as drugs for a pharmacy class) but they are not as helpful for learning ideas. That said, quizzing yourself can be very helpful. Create a list of potential questions that could be asked. This method is extremely helpful when studying with a partner as you can 'take' each other's quizzes.

Give yourself 2 to 4 practice exams before taking an exam in a problem solving course such as math, physics, or chemistry. If the professor makes a practice exam available, use that as a model and write your own additional exams. Time yourself so you can get a feel for the time it should take you.

Ask how many problems, and what type of problems, the exam has. This can help you determine how much time you have per problem (you can practice problems in this timeframe as you study). This can also help you determine what the exam will look like. You will be in for a big surprise if you spend weeks studying for a multiple choice exam on to find 2 essays and a word problem on the big day.

## Algebra I Midterm Formula Sheet Study Guide

Use this sheet to help study from. This is meant as a guide only! Do not simply memorize these formulas, you must know HOW to use them (what does each variable mean?). This sheet will be provided to you during the exam.

Slope intercept form:  $y = mx + b$

Point-slope form:  $y - y_1 = m(x - x_1)$

Standard Form:  $Ax + By = C$

Function form:  $y = mx + b$

Slope:  $m = \frac{y_2 - y_1}{x_2 - x_1}$

Direct variation:  $y = kx$

Inverse Variation:  $y = \frac{k}{x}$

Absolute value formula:  $y = a|x - h| + k$

Explicit formula for an arithmetic sequence:  $a_n = a_1 + d(n - 1)$   
given  $a_1$  and  $d$

Recursive formula for an arithmetic sequences:  $a_n = a_{n-1} + d$   
given  $a_1$  and  $d$

Piecewise function format  $f(x) = \begin{cases} mx + b & x < w \\ nx + c & w \leq x \leq v \\ px + d & x > v \end{cases}$   
when:

1 mile = 5280 ft

1 ft = 12 in

1 in = 2.54 cm

1 hr = 60 min

1 min = 60 sec

1 gal = 16 cups

1 gal = 8 pints

1 gal = 4 quarts

1 ton = 2000 lbs

Algebra

Midterm review

Question bank from Big Ideas

page	questions
23	12,18
32	15
33	51
41	34
47	2,4,6,9,13A
85	4,5,6
91	10
92	38
97	5,8
108	9,10,11,12,13,14,15,16
125	7
133	14
134	29
141	6,9,10,11
169	7,8
199	9,10,11,12
208	25,26,27D
214	5,13
215	33,38,45
229	1,2, 3,4,5,6,7,8
239	11,15
240	28
245	16
252	33
271	26
278	18, 24
285	5

Midterm Review part 2

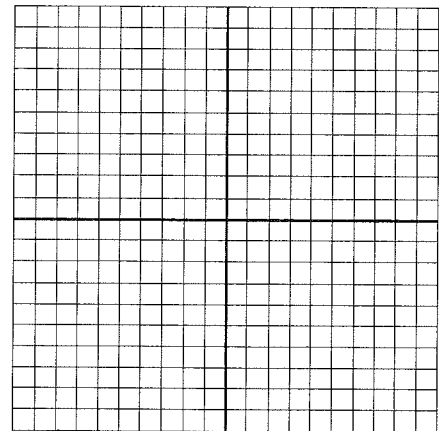
Name: \_\_\_\_\_

1. Graph the piecewise function below:

$$y = \frac{1}{2}x + 3 \quad x < -5$$

$$y = 5 \quad -5 \leq x \leq 4$$

$$y = \frac{2}{3}x - 1 \quad x > 4$$



EmbeddedMath.com

2. What is the vertex of the function in the form  $y = a|x - h| + k$  ?

3. Convert 2.5 miles to inches

4. Convert 47,304,000 seconds into years

Evaluate if:  $f(x) = 2x + 5$  and  $g(x) = 3x$

5.  $f(g(x)) =$   $g(g(f(x))) =$

Determine if each equation below is correct. If so, state whether it is displaying the associative, commutative, distributive, or identity property for its respective operation

6.  $(a + b) + c = a + (b + c)$  True False Property if true: \_\_\_\_\_

7.  $a(b + c) = (a + b)c$  True False Property if true: \_\_\_\_\_

8.  $a / 1 = a$  True False Property if true: \_\_\_\_\_

9.  $a + b - c = -c + b + a$  True False Property if true: \_\_\_\_\_

10.  $a(b - c) = ab - ac$  True False Property if true: \_\_\_\_\_

Recall the formula  $y = a|x - h| + k$  where  $(h,k)$  is the vertex of the graph

1. The graph  $y = -|x + 1| - 2$  opens down because:

a)  $a > 0$

b)  $k > 0$

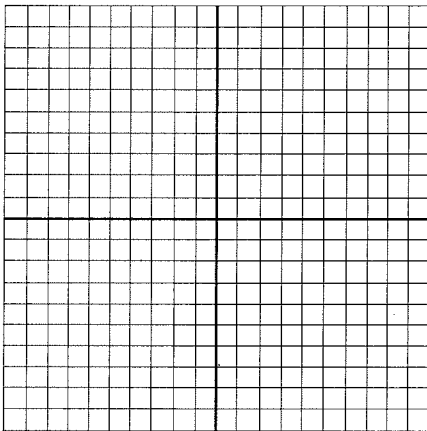
c)  $a < 0$

d)  $k < 0$

2. What are the coordinates for the vertex of  $y = |x - 1| - 2$

3. Graph the scenario below:

- starting from the origin,  $y$  increases by 2 and  $x$  increases by 3 until the point  $(3,2)$
- At  $(3,2)$ , graph  $y = 5$  until the point  $(7,5)$
- At  $(7,5)$ , graph a line with a slope of  $\frac{1}{2}$  that goes on forever



EmbeddedMath.com

4. Write the piecewise function described in #3 above:

Recall that the formula  $a_n = a_1 + d(n-1)$  represents the recursive sequence that starts at  $a_1$  and changes by  $d$ .

5. Write the recursive formula that begins at 5 and changes by 6

6. Find  $a_3$

Recall that the formula  $a_n = a_1 + d(n-1)$  represents the explicit sequence that starts at  $a_1$  and changes by  $d$ .

7. Write the explicit formula that begins at 2 and changes by 4.

8. Find  $a_3$

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

ID: A

## Algebra I / Honors Midterm Worksheet

### Short Answer - Calculators allowed

1. Simplify  $5^3 + 10 \div 5 - (2 - 8)$ .
2. Evaluate  $2 + c - 7 \cdot 3$  for  $c = 6$ .
3. Simplify the expression  $\frac{9 + 3^2}{9} + |7 - 9|$ .
4. Simplify by combining like terms.  
 $5y^3 + 10x - 2y^3 - 5x + 4y^2$
5. Name the quadrant where the point  $(2, -3)$  is located.
6. The fuel for a chain saw is a mix of oil and gasoline. The ratio of ounces of oil to gallons of gasoline is 7:19. There are 114 gallons of gasoline. How many ounces of oil are there?
7. The local school sponsored a mini-marathon and supplied 40 gallons of water per hour for the runners. What is the amount of water in quarts per hour?

Name: \_\_\_\_\_

ID: A

14. Solve  $\frac{4}{7}z = 56$

15. Solve  $27 = 11 - 2z$

16. Solve  $11c + 42 - 5c = 48$

17. Solve  $-3x - 8 + 2x = -1 - 3x$

18. Solve  $7x + 2 + 2x = -9 + 9x + 21$

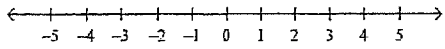
19. Solve  $3z - 5x = 4y$  for  $x$



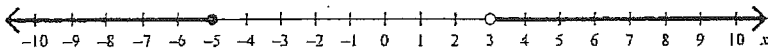
Name: \_\_\_\_\_

ID: A

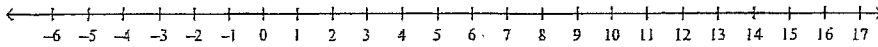
26. Solve and graph the compound inequality.  $s - 3 < -4$  OR  $4 + s \geq 5$



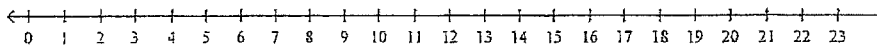
27. Write the compound inequality shown by the graph.



28. Solve and graph  $x - 3 < 5$  AND  $x + 7 \geq -6$ ?



29. Solve the inequality  $|x - 6| - 5 < 1$  and graph the solutions.



Name: \_\_\_\_\_

35. Solve  $|2x - 5| + 9 = 7$ .

36. Salar's Drama class is performing a play. He wants to buy as many tickets as he can afford. If tickets cost \$3.25 each and he has \$12.75 to spend, how many tickets can he buy?

37. Mrs. Williams is deciding between two field trips for her class. The Science Center charges \$200 plus \$4 per student. The Dino Discovery Museum simply charges \$9 per student. For how many students will the Science Center charge less than the Dino Discovery Museum?

38. Find three consecutive integers such that twice the greatest integer is 2 less than 3 times the least integer.

39. Write the equation for the inverse variation in which  $y = 8$  when  $x = -2$ .

41. Tell whether the relation is a direct variation. Explain. (Hint find  $k$  the constant of variation for each ordered pair)

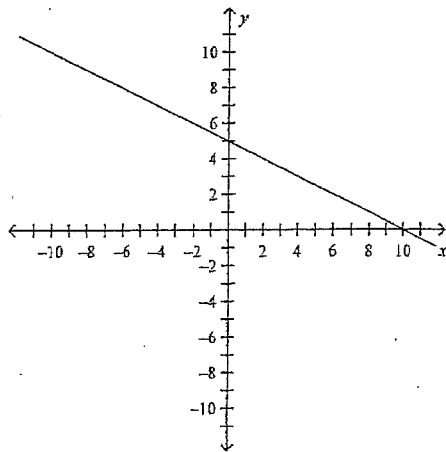
$x$	-10	-9	1
$y$	20	18	-2

Name: \_\_\_\_\_

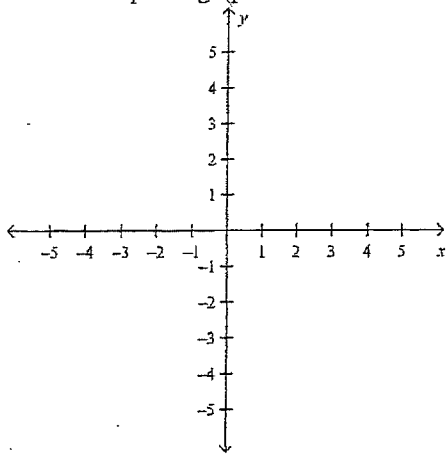
ID: A

42. At a summer camp there is one counselor for every 8 campers. Write a direct variation equation for the number of campers,  $y$ , that there are for  $x$  counselors. Then graph.

43. Find the  $x$ - and  $y$ -intercepts.



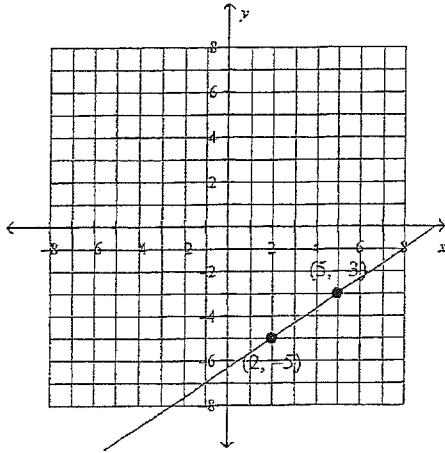
44. Use intercepts to graph the line described by the equation  $3x + 2y = 6$ .



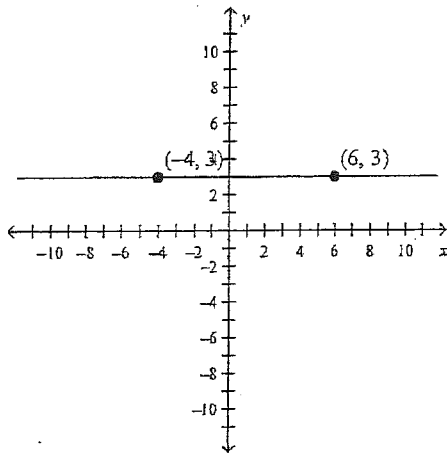
Name: \_\_\_\_\_

ID: A

45. Find the slope of the line and write an equation of the line.



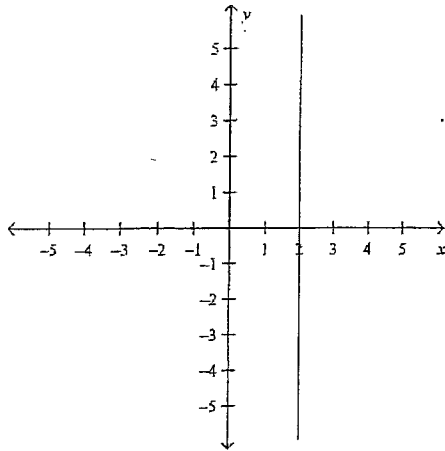
46. Find the slope of the line and write the equation of the line.



Name: \_\_\_\_\_

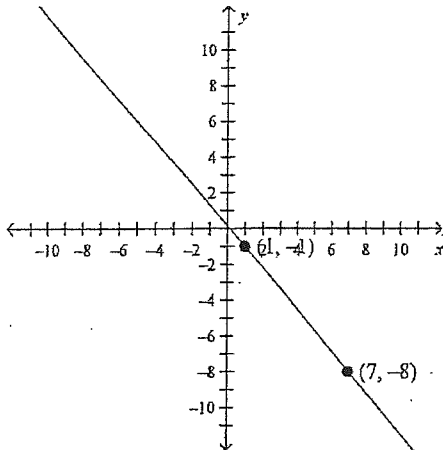
ID: A

47. Find the slope of the line and write the equation of the line.



48. Find the slope of the line that contains  $(1, 6)$  and  $(10, -9)$ .

49. The graph shows a linear relationship. Find the slope.

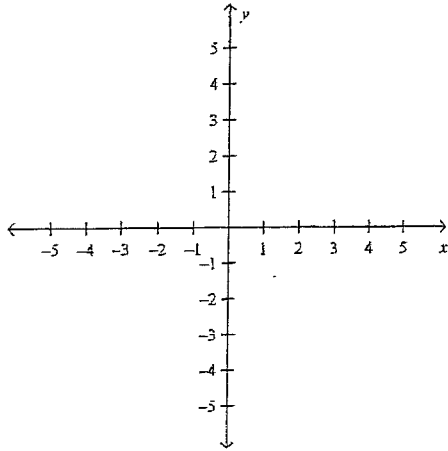


50. Find the slope of the line described by  $x - 3y = -6$ .

Name: \_\_\_\_\_

ID: A

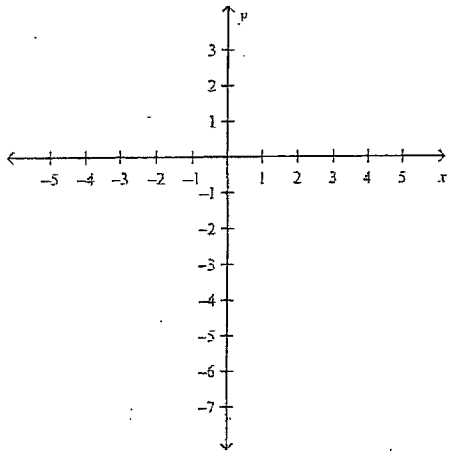
51. Graph the line with the slope  $\frac{1}{3}$  and  $y$ -intercept  $-2$ .



52. Write the equation that describes the line with slope  $= 2$  and  $y$ -intercept  $= \frac{3}{2}$ .

53. Write the equation that describes the line with slope  $= 4$ , point  $(3, -2)$  is on the line

54. Graph the line with a slope of  $\frac{2}{3}$  that contains the point  $(3, -7)$ .



Name: \_\_\_\_\_

ID: A

55. Write an equation of the line that has a slope of 6 and contains the point  $(-8, -7)$ .

56. Write an equation of the line perpendicular to the x-axis and that contains the point  $(2, 3)$ .

57. Write an equation of the line that passes through  $(3, 7)$  and  $(7, 4)$ .

58. Write the equation for a line with the same y-intercept as  $x + 4y = 12$  and its graph contains the point  $(5, 4)$ .

59. Identify the lines that are perpendicular:

$$y = -2 \qquad y = \frac{1}{5}x + 3 \qquad x = -2 \qquad y + 3 = -5(x + 2)$$

60. Write an equation of the line parallel to  $y = 5x - 2$  that passes through the point  $(8, -2)$ .

61. Tell whether the ordered pair  $(5, -3)$  is a solution of the system 
$$\begin{cases} -3x + 2y = -21 \\ -x - y = -2 \end{cases}$$

62. Solve the system 
$$\begin{cases} 3x + 4y = -36 \\ -2x + 4y = -16 \end{cases}$$