

Math 105 Exam 1 September 20, 2007
Chapters P3 – 1.5

Name _____ Instructor name or section # _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14	total
12	4	8	12	8	8	6	5	6	9	8	4	4	6	100

Given: Ave Rate of Change = $\frac{f(x_2) - f(x_1)}{x_2 - x_1}$ point slope form of a line: $(y - y_1) = m(x - x_1)$,
 slope intercept form of a line: $y = mx + b$, general form of a line: $ax + by + c = 0$

Show All Work for Full Credit!!

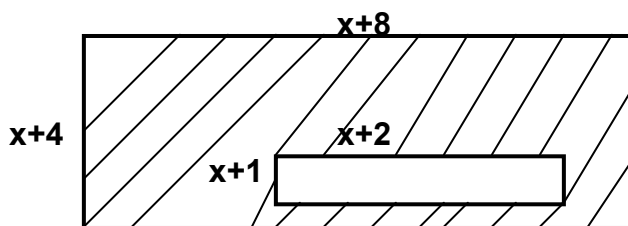
1. (4 pts ea) Simplify. No negative exponents

a.) $\frac{12x^4}{3x^8}$

b.) $\sqrt{12x} - \sqrt{27x}$

c.) $8^{2/3}$

2. (4 pts) Use the figure to the right to write a polynomial that represents the area of the shaded region. Express in descending powers of x.



3. (4 pts ea) Perform the indicated operation. Indicate restrictions on the domain:

a.) $\frac{4}{x+9} - \frac{4}{x}$

b.) $\frac{x^3 - 7x^2}{x^2 + 2x - 63} \cdot \frac{x^2 - 49}{x^2}$

10. (3 pts ea) Given the piecewise function $g(x)$, evaluate at three points given below.

$$g(x) = \begin{cases} 4x + 4 & x \geq 0 \\ 3x + 5 & x < 0 \end{cases} \quad g(-3) = \underline{\hspace{2cm}} \quad g(0) = \underline{\hspace{2cm}} \quad g(1) = \underline{\hspace{2cm}}$$

11. (2 pts ea) Use the given conditions to write an equation for the line in point-slope form and slope-intercept form:

a.) Slope = -2 , passing through the $(-2, -1)$

Point-slope form: $\underline{\hspace{4cm}}$

Slope-intercept form: $\underline{\hspace{4cm}}$

b.) Passing through $(3, 1)$ parallel to $y = -2x + 1$

Point-slope form: $\underline{\hspace{4cm}}$

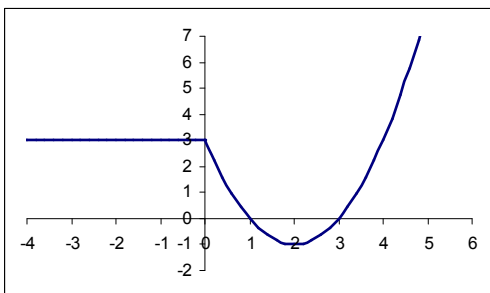
Slope-intercept form: $\underline{\hspace{4cm}}$

12. (4 pts) Find the value of y if the line through the two given points is to have a slope of -2 .

$(-5, y)$ and $(-9, 4)$

13. (4 pts) Find the average rate of change of $f(x) = \sqrt{x}$ from $x_1 = 4$ to $x_2 = 16$.

14. (2 pts ea) Assume the graph continues its trends and use it to determine:



Interval/s where the function is increasing. $\underline{\hspace{2cm}}$

Interval/s where the function is decreasing. $\underline{\hspace{2cm}}$

Interval/s where the function is constant. $\underline{\hspace{2cm}}$