

# Eric's 305G: HW 1

Due: August 29th, 2008

Section A.1

p. A11

40. Graph the numbers  $x$  on the real line:  $x < 4$

54. Evaluate the following expression, if  $x = -2$  and  $y = 3$ :  $\frac{x+y}{x-y}$

72. Determine which of the values (a)  $x = 3$ , (b)  $x = 1$ , (c)  $x = 0$ , or (d)  $x = -1$ , if any, must be excluded from the domain of the variable in this expression:  $\frac{x^3}{x^2-1}$

90. Simplify this expression:  $(2^{-1})^{-3}$

94. Simplify this expression:  $\sqrt{(-3)^2}$

102. Simplify this expression, and express your answer so that all exponents are positive:  $\frac{4x^{-2}(yz)^{-1}}{2^3x^4y}$

Section A.3

p. A30

36. Simplify this expression, and express your answer as a single polynomial in standard form:  $8(4x^3 - 3x^2 - 1) - 6(4x^3 + 8x - 2)$

44. Simplify this expression, and express your answer as a single polynomial in standard form:  $(3x + 1)(2x + 1)$

54. Simplify this expression, and express your answer as a single polynomial in standard form:  $(x + 1)^3$

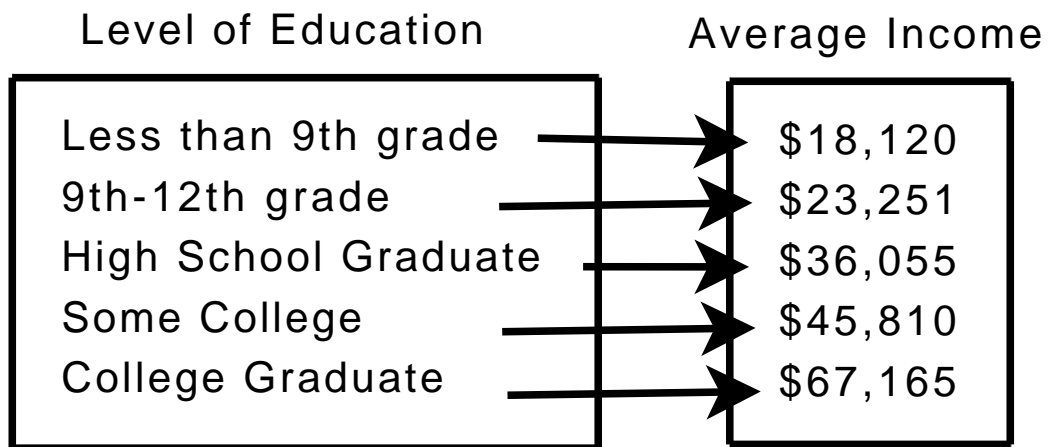
74. Factor this polynomial:  $x^2 - 9$

80. Factor this polynomial:  $x^2 - 6x + 8$

Section 2.1

p. 61

18. Determine whether the relation at the top of the next page represents a function. If it does represent a function, state its domain and range.



24. Determine whether this relation represents a function. If it does represent a function, state its domain and range.

$$\{(-4, 4), (-3, 3), (-2, 2), (-1, 1), (-4, 0)\}$$

36. Determine whether the equation defines  $y$  as a function of  $x$ :  $y = \frac{3x-1}{x+2}$

40. Let  $f(x) = -2x^2 + x - 1$ , and find each of the following: (a)  $f(0)$ , (b)  $f(1)$ , (c)  $f(-1)$ , (d)  $f(-x)$ , (e)  $-f(x)$ , (f)  $f(x+1)$ , (g)  $f(2x)$ , (h)  $f(x+h)$