

EXAM 1
Math 152
December 15, 2009

Name _____

You must show all your work. Partial credit will be given.

1. Find each of the following quantities. (Show Steps! No decimals allowed.) (5 pts each)

(a) $-341 + (-222)$

(b) $326 + (-201) + 463$

(c) $\left(\frac{3}{17} + \frac{6}{29}\right) + \frac{3}{-17}$

(d) $\left(\frac{3}{5} \cdot \frac{7}{-8}\right) \cdot \frac{-8}{3}$

(e) $\frac{-11}{6} \div \frac{2}{-3}$

(f) $\frac{5}{-11} \cdot \frac{-13}{7} + \frac{-5}{11} \cdot \left(-\frac{-13}{7}\right)$

2. Consider the properties.

- (a) The set is closed under addition
- (b) The set has an additive identity
- (c) The set has a multiplicative identity
- (d) The set has an additive inverse for each of its elements
- (e) The set has multiplicative inverses for each of its non-zero elements

Next to each set named below list all the letters corresponding to the properties listed above which apply to that set. (2 pts each)

i. N = the set of negative integers.

ii. Q = the set of all fractions.

iii. $2I$ = the set of even integers. (i.e. $\{\dots, -2, -1, 0, 1, 2, \dots\}$)

iv. C = the set of counting numbers. (i.e. $\{1, 2, 3, 4, \dots\}$)

v. L = the set of negative fractions.

3. Write each of the following with no exponents. (Show Steps!) (5 pts each)

(a) $(2^3)^{-2}$

(b) $\frac{5^{-4}5^2}{5^{-1}}$

(c) $27^{\frac{2}{3}}$

(d) $(\sqrt[3]{-8})^4$

4. Solve each of the following for x . (5 pts each)

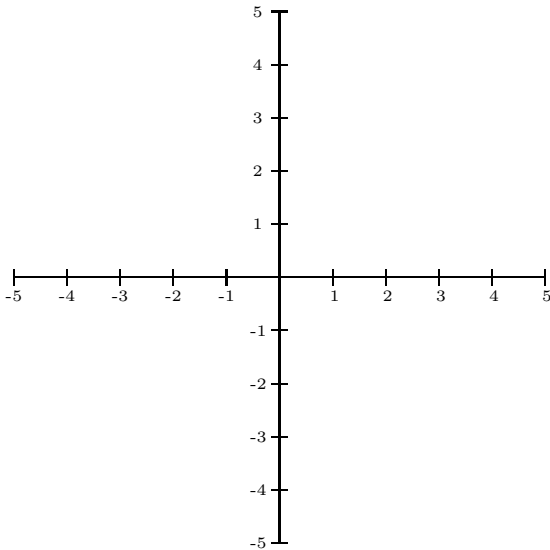
(a) $x - (-8) = 17$

(b) $3x + 5 \leq -16$

(c) $\frac{-3}{7}x > \frac{-4}{5}$

(d) $-2 = \left(\frac{-5}{12}\right)x + 3$

5. Make a table of at least five values for the function $f(x) = x^2 - 2x - 1$ and plot the function on the axes below. (5 pts)



6. A farmer goes to market and buys a total of 100 animals at a total cost of \$1000. If cows cost \$50 each, sheep cost \$10 each, and rabbits cost \$0.50 each, how many of each kind of animal does he buy. (5 pts)

7. Fill in each empty square so that a number in a square is the product of the two numbers beneath it. (5 pts)

