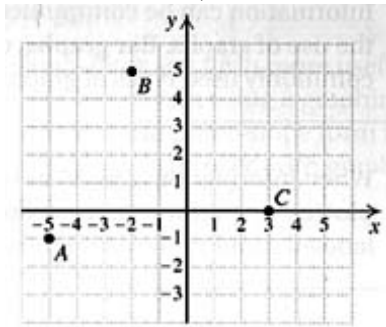**MATD 0370 – Elementary Algebra – Review Sheet for Exam #2**
Show your work on your own paper – you will not receive credit for answers only.
Do not write on this sheet.

Remember, each problem represents a concept to review
Also review your last exam – any of those topics can be on this exam.

1) Plot the points: (5, –1), (–4, 0), (2, 3).

2) Find the coordinates of A, B and C in the figure:

Graph problems 3 – 10. Be sure to label your scale and axes.

3) $y = -x + 4$ 4) $y = -\dfrac{1}{4}x$ 5) $2x - y = 3$ 6) $y = \dfrac{2}{3}x - 5$
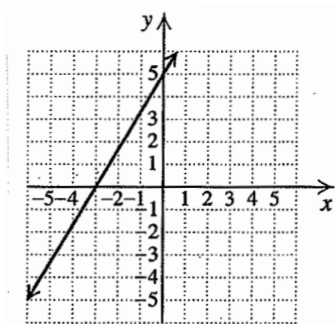
7) $y = x - 5$ 8) $4x + y = 3$ 9) $y = 6$ 10) $3x = -6$

11) Find the x-intercept and y-intercept and graph: $2x - 5y = 10$
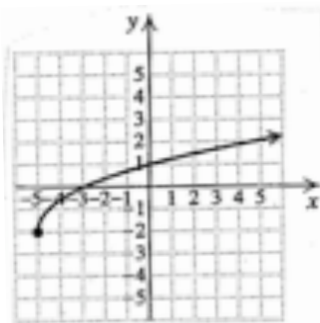
12) Find the x-intercept and y-intercept and graph: $4x + 5y = 20$

13) Find the coordinates of the x-intercept and y-intercept for each graph:

    a)

    b)

14) At 8:30am, the Colchester Boy Scouts had served 47 people at their annual pancake breakfast. By 9:15, the total served had reached 67.
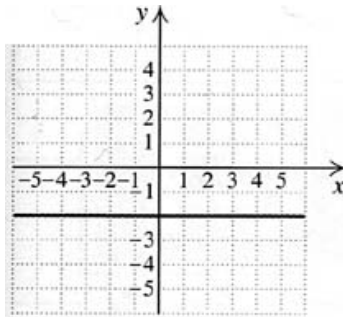   a) Find the Boy Scouts' serving rate, in number of meals per minute
        b) Find the Boy Scouts' serving rate, in minutes per meal

15) The following graph shows data from a recent train ride from Denver to Kansas City. At what rate did the train travel?
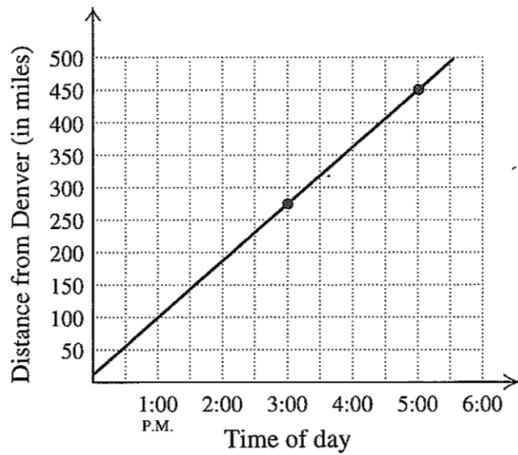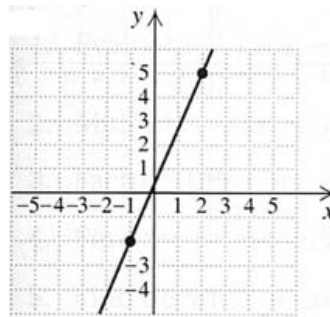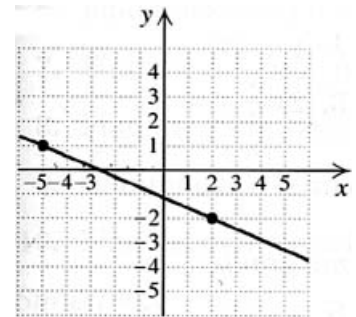

16) Find the slope of each line:

a)

b)

c)

17) Find the slope of:

        a) $x = -1$
        b) $y = 4$

For problems 18 – 20, find the slope of the line containing the two points.

18) (6, 8) and (–2, –4)   19) (–1, 5) and (3, –3)   20) (–3, 0) and (–3, 5)

21) A mountain path drops 250.2 feet vertically for every 5093 feet horizontally. What is the grade of the path? (Round to the nearest percent)

22) Find the slope and y-intercept: $y = \dfrac{5}{3}x - 2$

23) Find the slope and y-intercept: $2x + 4y = 20$

24) Write the slope-intercept equation of the line with a slope of $-\dfrac{3}{5}$ and a y-intercept of (0, –1)

25) Write the slope-intercept equation of the line with a slope of 5 that contains the point (3, –10)

26) Write the slope-intercept equation of the line with a slope of $\dfrac{1}{4}$ that contains the point $(-8, 4)$

27) Write the slope-intercept equation of the line containing the two points: $(-2, -4)$ and $(1, 5)$

28) Write the slope-intercept equation of the line containing the two points: $(3, 10)$ and $(-2, 5)$

29) Write the slope-intercept equation of the line with a slope of $-\dfrac{8}{3}$ that contains the point $(3, -4)$

Simplify for problems 30 – 37.

30) $3x^0$ 31) $y^7 \cdot y^3 \cdot y$ 32) $6^5 \cdot 6^{10}$ 33) $\dfrac{4^6}{4^2}$ 34) $\dfrac{-12x^9}{15x^2}$

35) $\dfrac{18r^{10}s^7}{6r^2s}$ 36) $\left(5x^4y\right)\left(-2x^3y^7\right)^2$ 37) $\left(\dfrac{3t^4}{-2s^3}\right)^2$

Simplify and write your answer using positive exponents for problems 38 – 42.

38) $w^{-2} \cdot w^5$ 39) $\dfrac{z^{-6}}{z^{-3}}$ 40) $(4y^{-3}z)^{-2}$ 41) $\dfrac{6m^{-5}v}{3m^8v^{-8}}$ 42) $\left(\dfrac{4x^{-4}}{-2y^7}\right)^{-3}$

43) Convert to scientific notation: a) 0.00000571 b) $745{,}600{,}000{,}000$

44) Multiply. Write your answer in scientific notation: $(3.8\times10^4)(5.5\times10^{-9})$

45) Multiply. Write your answer in scientific notation: $(4.5\times10^{-3})(3.1\times10^5)$

46) Divide. Write your answer in scientific notation: $\dfrac{(1.3\times10^{-5})}{(3.7\times10^{-12})}$

47) Divide. Write your answer in scientific notation: $\dfrac{(7.2\times10^{-7})}{(8.0\times10^6)}$

48) For the polynomial: $-2x^2 + 7 - 3x^5 + x$
    a) Determine the leading term and the leading coefficient
    b) Determine the degree of the polynomial

49) Combine like terms and write in descending order: $3x^2 - 2x + 3 - 5x^2 - 1 - x$

50) Evaluate the polynomial for $x = -1$: $x^2 - 3x + 6$

51) Evaluate the polynomial for $x = -3$: $4x^2 - 6x + 9$