

**Math 0020 July 10, 2007 Test 2**

Simplify and leave your answer with only positive exponents.

1)  $x^8x^3$

2)  $a \cdot a^3 \cdot a^5$

3)  $(2x)^3$

4)  $(y^4)^7$

5)  $(3x^4y)(2x^3y^7)$

6)  $\frac{y^9}{y^5}$

7)  $\frac{x^{10}}{x^{17}}$

8)  $(x^2y^{-3})^4$

9)  $\frac{8x^{-3}}{2x^2y^{-7}}$

10)  $\left(\frac{2x^5}{y^4}\right)^2$

Express each in scientific notation.

11) 410,000,000,000

12) 0.00095

Express each as a decimal.

13)  $-3.65 \times 10^5$

14)  $2.4 \times 10^{-3}$

Perform the operations.

15)  $\frac{5.4 \times 10^{24}}{3.2 \times 10^{15}}$

16)  $(4 \times 10^{1000}) \cdot (2 \times 10^{7000})$

17) Find the x and y axis intercepts for the line  $2x + 3y = 12$ .

18) Find the slope of the line passing through the points (2,3) and (5,15).

19) Find the equation of the line with slope  $m = 4$  and y-axis intercept  $b = 5$ .

20) Graph the line  $y = -2x + 1$ .

21) Graph the line  $y = 4$

22) Graph the line  $x = -3$

23) Find the slope and y-axis intercept for the line  $6x + 3y = 18$

24) Graph the inequality  $y \leq 2x + 1$

25) For the function  $f(x) = 6x - 10$ , find  $f(5)$