

**MATH R3 PROF. ALFRED DOLICH TEST #2
REVIEW**

Please do the following 9 problems. Please show all of your work for ANY credit and please write neatly. You may not use a calculator on this test.

(1) Write without exponentials:

(a) x^3y^5 .

(b) $-x^5$

(2) Evaluate:

(a) $(-2)^7$

(b) $(2x)^3$ when $x = -1$.

(3) Simplify:

(a) $\left(\frac{z^5 y^8}{w^8 x^5 p^3}\right)^1$

(b) $(x^3)^2 y^5 x^2 y^4 y^6$

(4) Simplify:

(a) $\left(\frac{1}{x^{-2}}\right)^{-1}$

(b) $\frac{12x^{-2}}{24y^{-2}}$

(5) Write in scientific notation:

(a) 31000000

(b) $\frac{4 \times 10^3}{8 \times 10^{-3}}$

(6) Perform the indicated operation:

(a) $(12x^3 - x^2 - x - 7) - (12x^3 + x^2 + x + 7)$

(b) $(x^3 + y + x^2 - 2x + 9) + (x^3 - x^2 + 2x + 18)$

(7) Multiply:

(a) $xz(xz - x^2 + z^2 - z)$

(b) $(x^2 + x + 2) \times (x^2 + 2x + 1)$

(8) Divide:

(a) $(-3x^5yz^3) \div (3xz^2)$.

(b) $(y^2 + 6y + 5) \div (y + 2)$.

(9) Factor:

(a) $x^2 + 17x + 60$.

(b) $x^3 - 2x^2 + 4x - 8$