

MATH A UNIT 3 REVIEW

Show work on separate paper.

PART 1. SHOW YOUR WORK. CIRCLE YOUR ANSWERS.

1. Solve each system of equations by Graphing, by the Substitution Method, and by the Addition (aka Elimination) Method. Be sure to demonstrate all three methods for each problem. You should get the same solution by any method! (See sections 5.1 – 5.3)

a) $x + 2y = 2$
 $x - y = 2$

b) $x + y = 1$
 $-x + y = 3$

c) $2x - 5y = -1$
 $3x + y = 7$

d) $x + 2y = 5$
 $3x + 6y = 6$

e) $2x - y = 10$
 $y = 3x$

PART 2. SHOW YOUR WORK. CIRCLE YOUR ANSWERS.

1. Do the following problems from the textbook. (See section 5.4)

a) Page 326 # 8

b) Page 326 # 12

c) Page 338 # 43

2. Perform the indicated operation. (See section 6.1)

d) $(-x^2 + x - 9) - (-x^2 - x + 2)$ e) $-(-a^3 - a^2 + 10) - (-a^2 - a - 3) + (3a^3 - 4a - 1)$

f) $\left(-m^2 - m - \frac{1}{2}\right) - (3 - m^2 - m) - \left(3m^2 - \frac{2}{3}m - 1\right)$

g) $\frac{y^3 + 2y^2 - 7y - 3}{-y^3 - 6y^2 - 8y + 11}$

h) $\frac{7y^5 - 3y^3 + y^2}{2y^3 - y^2 - 4y - 3}$

i) $\frac{\frac{1}{4}x^4 - \frac{2}{3}x^3 - 5}{-\frac{1}{2}x^4 + \frac{1}{5}x^3 + 4}$

3. Find each product. (See sections 6.2 – 6.4)

j) $-a^2(2a^2 + 6a - 13)$

k) $14a(-2a^3 + a^2 - 3a - 10)$

l) $(2p - 5)(3p + 2)$

m) $(x - 3)(2x - 1)$

n) $(3x - 1)(x - 3)$

o) $(2x - 3)^2$

p) $(x - 7y)^2$

q) $(2x + y)(2x - y)$

r) $(4x - 5)(4x + 5)$

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PART 3. SHOW YOUR WORK. CIRCLE YOUR ANSWERS.**1. Find each quotient. (See section 6.5)**

$$\begin{array}{llll} \text{a)} & \frac{-8x^2y^5}{-2xy^3} & \text{b)} & \frac{18a^{13}b^7c^2}{-3a^4b^7c} & \text{c)} & \frac{-64x^3y^{12}}{16xy^2} & \text{d)} & \frac{-4p^{22}v^2}{10p^{22}v^2} \\ \text{e)} & \frac{-20x^4+4x^3-8x^2}{-4x^2} & \text{f)} & \frac{18a^3b^2-6a^2b^2+90ab^2}{-6ab^2} & \text{g)} & \frac{10a^3b^6-20a^2b^{10}+3a^2b^6}{5a^2b^6} \end{array}$$

2. Use long division to find each quotient. (See section 6.6)

$$\begin{array}{lll} \text{h)} & \frac{x^3-6x^2+9x-5}{x-4} & \text{i)} & \frac{a^3-2a^2+3}{a-1} & \text{j)} & \frac{2x^3-7x^2-x-6}{2x-1} \end{array}$$

3. Simplify each expression. Write answers with positive exponents only. (See sections 6.5, 6.7)

$$\begin{array}{llll} \text{k)} & -3^4 & \text{l)} & -3^{-4} & \text{m)} & 3^{-4} & \text{n)} & 4^{-2} \\ \text{o)} & -4^2 & \text{p)} & -4^{-2} & \text{q)} & 80y^0 & \text{r)} & -80^0 \\ \text{s)} & 9^0 - 5x^0 & \text{t)} & -2^0 + (-2)^0 & \text{u)} & \left(\frac{-4x}{y^5}\right)^3 & \text{v)} & \left(\frac{x^5}{-3y^2}\right)^4 \\ \text{w)} & \left(\frac{-2y}{3x}\right)^2 & \text{x)} & (3x^{-2})^{-4} & \text{y)} & (-2x^{-2})^{-3} & \text{z)} & (4z^2)^{-3} \end{array}$$

PART 4. SHOW YOUR WORK. CIRCLE YOUR ANSWERS.**1. Convert each number in scientific notation to a number in decimal notation. (See section 6.7)**

$$\text{a)} \quad 4.32 \times 10^{-3} \quad \text{b)} \quad 2.19 \times 10^7 \quad \text{c)} \quad 3.75 \times 10^{-2} \quad \text{d)} \quad 4.1 \times 10^{-1}$$

2. Convert each number in decimal notation to a number in scientific notation. (See section 6.7)

$$\text{e)} \quad 443,000,000 \quad \text{f)} \quad 400 \quad \text{g)} \quad 0.00089 \quad \text{h)} \quad 0.2345$$

3. Perform each computation without using a calculator. Write your answer in scientific notation. (See section 6.7)

$$\text{i)} \quad (4.0 \times 10^2)(3.0 \times 10^{-4}) \quad \text{j)} \quad (8.0 \times 10^{-3})(8.0 \times 10^{-3}) \quad \text{k)} \quad \frac{(6.0 \times 10^4)}{(3.0 \times 10^{-1})} \quad \text{l)} \quad \frac{3.6 \times 10^9}{7.2 \times 10^{-15}}$$