

1. Simplify: **Sec 4.1**

a. $b^5 \cdot b^3$

b. $3^7 \cdot 3^4$

c. $(a^9 b^2)(ab^3)$

d. $\frac{x^9}{x^4}$

e. $\frac{8^{11}}{8^3}$

f. $\frac{8a^6 b^8}{12a^3 b^5}$

g. 3^0

h. $2x^0$

i. $(2x)^0$

j. $a^7 \cdot a^0$

k. $\frac{b^5}{b^0}$

l. $(m^2)^3$

m. $(2^5)^4$

n. $(-4x^3)^2$

o. $\left(\frac{x}{3}\right)^3$

p. $\left(\frac{x^2 y^3}{y^2}\right)^3$

q. $\frac{t^4 t^3}{(t^2)^2}$

2. **Sec. 4.2** For the polynomial, $4y^3 - 3y^2 + 7y - 11$, identify each term in the polynomial, the coefficient and the degree of each variable term and the constant

Term _____ Coefficient _____ Degree _____

Term _____ Coefficient _____ Degree _____

Term _____ Coefficient _____ Degree _____ Constant _____

For each polynomial, state the degree and leading coefficient.

a. $-3x^2 + 7x$ Degree _____ Leading coefficient _____

b. $-70x^4 + 8x^3 + 10x^5 + 6$ Degree _____ Leading coefficient _____

c. $4x^3 - 6x^2 + 3x + 5$ Degree _____ Leading coefficient _____

3. **Sec 4.3**

a. Add: $(-2x^2 + 3x - 4) + (5x^2 - 2x - 5)$

b. Add: $12x^2 + 5x$ and $x^2 - 2x$

c. Find the sum of: $4x^2 + 7x + 2$ and $x - 5$

d. Subtract: $(7x^2 - 3x + 1) - (-2x^2 - 3x + 6)$

PRACTICE SHEET # 3 FOR MTH020 EXAM # 3 REV 10-18-2016
TO BE USED FOR EVERY LECTURE

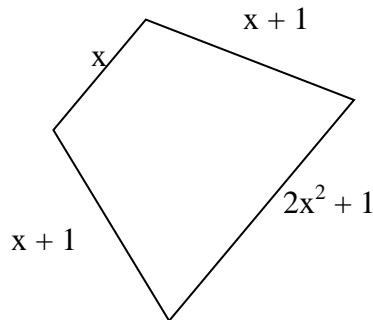
e. Subtract: $(2x^3 + 5x^2) - (x^3 + 2x)$

f. Subtract: $(5x^2 + 3x - 6) - (-3x^2 - 5x - 2)$

g. Perform the indicated operations:

$$(20w^3 - 7w) + (w^3 + 5w^2) - (12w^3 - 3w^2 + 2w - 4)$$

h) Geometry Problem: Find the perimeter of the polygonal.



4. **Sec 4.4, 4.5, 4.7**
Simplify:

a. $(-6x^2y^2)(-2xy^2)$

b. $(3x^3)(-2x^4)$

c. $(x^2y)^3$

d. $-3x(4x^2 - 2x + 1)$

e. $(x+3)(x-7)$

f. $(x-4)^2$

g. $(3x+2)(3x-2)$

h. $(2t+3)(t^2 - 4t + 5)$

i. $\frac{12x^2 - 6x}{6x}$

j. $\left(\frac{8a^5 - 4a^4 + 6a^3}{2a^3}\right)$

k. $\frac{16r^2 - 24r^5 + 8r}{-4r}$

l. $(a+1)(a^2 - a + 1)$

m. $\frac{12a^3b^2 - 4a^4b^5 + 16ab^2}{-4ab^2}$

n. $(32t^5 + 16t^4 - 8t^3) \div (-8t^3)$

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5. Rewrite with positive exponents. Simplify if possible: **Sec 4.8**

a. x^{-3}

b. 5^{-2}

c. $\frac{1}{a^{-4}}$

d. $\frac{1}{8^{-2}}$

e. $3x^{-2}$

f. $\frac{a^{-3}}{b}$

g. $\frac{3^2}{3^{-1}}$

h. $4^{-2} \cdot 4^5$

i. $y^{-3} \cdot y^{-5}$

j. $(5a^{-2}b^{-3})(2a^{-4}b)$

k. (x^{-5})

l. $\frac{z^{-4}}{3z^3}$

m. $(9y^{-5})^{-2}$

n. $\frac{x^2x^{-1}}{x^{-6}}$

o. $\frac{t^2t^3}{t^2t^{-6}}$

6. **Factor GCF: Sec 5.1**

a. $6x^2 - 6x$

b. $10n^4 - 6n^2 + 2n$

c. $10n^4 - 6n^3 + 2n^2$

Factor by Grouping (p. 307)

aa. $b(b + 4) - 2(b + 4)$

bb. $x(x + 5) - (x + 5)$

cc. $x^3 + 3x^2 + 7x + 21$

dd. $10x^3 - 25x^2 + 2x - 5$

Factor trinomials $a = 1$: Sec 5.2

d. $x^2 + x - 6$

e. $x^2 + 3x - 28$

f. $n^2 - 8n - 20$

g. $a^2 - 14a + 49$

h. $x^2 - 16x + 64$

i. $3y^2 - 9y - 84$

Factor trinomials $a > 1$: Sec 5.3

j. $2x^2 + 7x - 4$

k. $4t^2 + 12t + 5$

l. $3x^2 - 17x - 6$

m. $2a^2 - 16a + 32$

Factor each difference of squares **Sec 5.4**

a. $2x^2 - 81$

b. $4y^2 - 25$

c. $16x^2 - 1$

c. $25 - y^2$

d. $169x^2 - 49$

Factor by grouping: **Sec 5.5**

n. $4t^2 + 2t + 10t + 5$

o. $6a^2 - 8a - 3a + 4$

p. $2y^2 + 8y - y - 4$

q. $2x^2 - 4x + xz - 2z$

r. $5ca^3 + 5cb - a^3 - b$

s. $mx + my - px - py$
