

**REVIEW TEST 2 –**  
**Chapters 3 (only 3.5), 5, 6, 7, 8 (8.1 – 8.5)**

To prepare for the test, study the following :

**Section 3.5**

- All examples done in class + all homework problems

**Chapter 5 – Exponents and Polynomials**

- **Homework** – Chapter 5 - All homework problems.
- **All examples done in class**
- **More practice:**

1) Simplify each expression. Write the final answer using only positive exponents.

a)  $\left(\frac{2a^{-2}b}{3ab^{-3}}\right)^3$     b)  $\frac{a^0 + b^0}{2(a+b)^0}$     c)  $\frac{(-3p^4q^{-5})^{-3}(2p^{-4}q^3)^{-2}}{4p^5q^{-2}}$     d)  $\left(\frac{2x^{-4}y}{x^5y^5}\right)^{-3}\left(\frac{4x^{-2}y^0}{x^7y^2}\right)^2$     e)  $\frac{(-2x^2y^3)^2(3x^4y^5)^3}{(2x^2)^6(3y^8)}$

2) Simplify – use special products whenever appropriate:

a)  $(x+1)^3$     b)  $(2a-1)^3$     c)  $(x+2)^4$     d)  $\left(\frac{1}{2}x^2 + \frac{2}{5}x - 1\right)\left(4x^3 - \frac{5}{3}x^2 - x + \frac{1}{2}\right)$     e)  $\left(\frac{2}{3}x + \frac{5}{6}y\right)^2$   
 f)  $(a^2b - ab^2)^2$     g)  $\left(\frac{3}{2}a - \frac{8}{9}b^2\right)^2$     h)  $\left(\frac{10}{11}x - 1\right)\left(\frac{10}{11}x + 1\right)$     i)  $\left(3p + \frac{5}{4}q\right)\left(2p - \frac{5}{3}q\right)$

3) Let  $P(x) = -x^5 + 3x^4 - \frac{1}{2}x^2 - 10$ ,  $Q(x) = (x^4 - 3x - 1)(-x^2 - 5)$  two polynomials.

- a) How many terms does each polynomial have? ;    b) What is the degree of each polynomial?;  
 c) What is the constant term of each? ;    d) Find P(0) and Q(-1);    e) Find their sum and product;  
 f) Find P(x)-Q(x);    g) Divide Q by P;    h) Find P(2x).

**Chapter 6 – Factoring and Applications**

- **Homework** – Chapter 6 – All homework problems
- **Handout Chapter 6** – All exercises and applications
- **All examples done in class.**
- **Quiz #2**
- **More practice :**

1) Solve each equation by factoring:

a)  $x^2 - 9 = 0$     b)  $x^2 - 6x - 7 = 0$     c)  $y^2 + 2y = 0$   
 d)  $-20x^2 + 6 = -7x$     e)  $x^3 + 4x^2 + 3x = 0$     f)  $3x^2 - 21x = -30$   
 g)  $10x^2 + 43x = 9$     h)  $(2x + 3)(3x - 5) = -10$   
 j)  $(3x - 5)(4x + 1) = 24$     l)  $(3x + 1)^2 - 9x^2 = 31$

## Chapter 7 – Rational expressions

- **Homework** – Chapter 7 – All homework problems.
- **All examples done in class.**
- **More practice: odd exercises from the textbook**

## Chapter 8 ( Sections 8.1 – 8.5)

- **All homework**
- **All examples done in class**
- **Handout Chapter 8**
- **More practice:**

1. Simplify:

a)  $4\sqrt{50} + 3\sqrt{12} - 5\sqrt{45}$

e)  $(5\sqrt{7} - 2\sqrt{3})^2$

i)  $(\sqrt{x} + \sqrt{3x-1})^2$

b)  $(5\sqrt{7} - 2\sqrt{3})(3\sqrt{7} + 4\sqrt{3})$

f)  $5\sqrt{5}(3\sqrt{5} + \sqrt{2}) - \sqrt{2}(2\sqrt{8} + \sqrt{5})$

j)  $\frac{12 - 4\sqrt{10}}{4}$

c)  $2\sqrt{12} + 3\sqrt{75}$

g)  $(\sqrt{6} + 1)^2$

d)  $2\sqrt[3]{32m^3} - \sqrt[3]{108m^3}$

h)  $\frac{16 + 8\sqrt{2}}{24}$

2. Rationalize each denominator:

a)  $\frac{2}{\sqrt{3}}$

b)  $\frac{5}{\sqrt[3]{2}}$

c)  $\frac{1}{4 + \sqrt{15}}$