**Pre-Calculus 10
Chapter 3 Practice test**

1. Expand and simplify the following polynomials.
2. $(x-2)(x+4)$
3. $(x+5)(x-6)$
4. $(x+3)(x+2)$
5. $(5x+6)(7x-5)$
6. $3\left(2x+3\right)\left(2x-1\right)-4(x^{2}-7)$
7. $(-2x^{2}y^{4})(3x^{3}y)$
8. $-xy^{2}z(x^{2}y^{2}z-xyz^{2}-x^{3}y^{2})$
9. $(4x+9)(7x^{2}+x-3)$
10. $(6x-9)^{2}$
11. Factor the following polynomials by taking out the greatest common factor.
12. $12xy-15y^{2}+24y$
13. $9x^{3}-24x^{2}-15x$
14. $4x^{3}+8x^{2}-12x$
15. $10x^{4}+5x^{3}-15x^{2}$
16. $10x^{2}y^{2}-15xy^{3}+25x^{3}y^{4}$
17. Factor, if possible.
18. $x^{2}+8x+7$ b) $x^{2}-11x+28$

c) $x^{2}-6x+9$ d) $x^{2}-7x+6$

e) $x^{2}-8x+7$ f) $x^{2}-4x-45$

g) $x^{2}-2x-15$ h) $x^{2}+2x-15$

i) $x^{2}-6x-40$

1. Factor, if possible.

a) $2x^{2}+24x+40$

b) $3x^{2}+6x-24$

c) $3x^{2}+12x-36$

d) $-2x^{3}+2x^{2}+12x$

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

f) $3x^{2}-21x+30$

g) $x^{4}-9x^{2}-90$

1. Factor, if possible.

a) $x^{2}-64$

b) $x^{2}+16$

c) $4x^{2}-9y^{2}$

d) $1-16x^{4}$

e) $4x^{2}-16y^{2}$

f) $196x^{2}-25y^{2}$

g) $411x^{2}-529y^{2}$

1. Factor, if possible.

a) $18x^{2}+60x+50$

b) $4x^{2}+12x+9$

c) $16x^{2}-40x^{3}+25x^{4}$

d) $4x^{2}-8xy-5y^{2}$

e) $-18x^{3}-24x^{2}y-8xy^{2}$

f) $x^{2}-9xy+14y^{2}$

g) $a^{2}c+a^{2}d^{2}-b^{2}c-b^{2}d^{2}$