# Factoring Test

1. A

2. C

3. $5x^2-80$

$5(x^2-16)$

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

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

$4x^2-6x-6x+9$

$4x^2-12x+9$ (B)

| | 2x | -3 |
|---|---|---|
| 3x | $6x^2$ | -9x |
| +4 | +8x | -12 |

5. FOIL $(2x-3)(3x+4)$

$6x^2+8x-9x-12$

$6x^2-x-12$ (A)

6. $(2x-3)(3x+1)$

$6x^2+2x-9x-3$ (B)

$6x^2-7x-3$

| | $x^2$ | -x | +5 |
|---|---|---|---|
| x | | | |
| -9 | | | |

7. $(x-9)(x^2-x+5)$

$x^3-x^2+5x-9x^2+9x-45$

$x^3-10x^2+14x-45$ (D)

8. $\sqrt{9x^2}-\sqrt{49}$

$3x \quad 7$ (A)

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

9. $3x^2+3x-6$

GCF 3

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

add/mult

$3(x+2)(x-1)$ (C)

10. $25xy+15x^2-30x^2y^2$

GCF: $5x$

$5x(5y+3x-6xy^2)$

1. $(3x+2)(x-4) - (x+2)(2x-5)$

$3x^2-12x+2x-8$

$3x^2-10x-8$

$2x^2-5x+4x-10$

$2x^2-x-10$

$$\begin{array}{r} 3x^2-10x-8 \\ -\ 2x^2-x-10 \\ \hline x^2-9x+2 \end{array}$$

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

| | $x^2$ | $x$ | $-4$ |
|---|---|---|---|
| $2x^2$ | $2x^4$ | $2x^3$ | $-8x^2$ |
| $-3x$ | $-3x^3$ | $-3x^2$ | $+12x$ |
| $+1$ | $x^2$ | $x$ | $-4$ |

$2x^4-x^3-10x^2+13x-4$

2A) $x^2-6x-16$

add ⇒ -6
mult ⇒ -16
-8 + 2

$(x-8)(x+2)$

B) $8x^2+10x-3$ (decomposition)

add ⇒ 10
mult ⇒ -24
-2 + 12

$(8x^2-2x)(+12x-3)$

$2x(4x-1)+3(4x-1)$

$(2x+3)(4x-1)$

C) $5x^2-20y^2$

GCF: 5

$5(x^2-4y^2)$

$5(x-2y)(x+2y)$

D) $4x^2-9x-9$ Decomposition

add ⇒ -9
mult ⇒ -36
-12 + 3

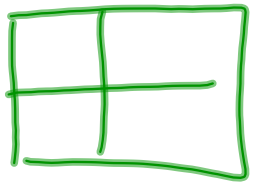
$(4x^2-12x+3x-9)$

$4x(x-3)+3(x-3)$

$(4x+3)(x-3)$

3. large Rectangle

$(4x-1)(2x+7)$



$8x^2+28x-2x-7$

$8x^2+26x-7$

Small rectangle

$(x+6)(x+2)$

$x^2+8x+12$

$$\begin{array}{r} 8x^2+26x-7 \\ -\ x^2+8x+12 \\ \hline 7x^2+18x-19 \end{array}$$

# Midterm

## Part I
30 multiple Choice

## Part II

Chp. 1
1. volume or surface area
2. volume / surface area of composite object
3. Solve for unknown variable Knowing answer to volume or surface area

3.1, 3.2 chp 4
4. exponent equation
5. simplify exponents
6. simplify radical (roots)
7. GCF / LCM

3.3 - 3.8
8. Factoring (all types * decomposition)
9. shaded region
10. expand & simplify

Sample Midterm 2015

Omit #27 – 30

part a: #10