

Math 1201
Test 2 Review

A. Factor completely:

$$1. \quad \frac{12x^3 + 6x^2 - 18x + 24}{6(2x^3 + x^2 - 3x + 4)} \Bigg| \frac{x^2 - 9}{(x+3)(x-3)} \quad \Bigg| \quad 2. \quad \frac{2a^2bc^4 - 6abc^3 + 12ab^2c^2}{2abc^2(ac^2 - 3c + 6b)}$$

$$3. \quad \begin{array}{l} x^2 + 10x + 16 \\ (x+8)(x+2) \end{array}$$

$$4. \quad \begin{array}{l} 4x^2 - 8x - 5 \\ (2x+1)(2x-5) \end{array}$$

$$5. \quad \begin{array}{l} x^2 + 7x + 10 \\ (x+5)(x+2) \end{array}$$

$$6. \quad \begin{array}{l} 2a^2 + 11a + 5 \\ (2a+1)(a+5) \end{array}$$

$$7. \quad \begin{array}{l} 2x^2 - 3x - 9 \\ (2x-3)(x+3) \end{array}$$

$$8. \quad \begin{array}{l} x^2 - 7x - 8 \\ (x+1)(x-8) \end{array}$$

$$9. \quad \begin{array}{l} x^2 - \frac{1}{9}y^2 \\ (x - \frac{1}{3}y)(x + \frac{1}{3}y) \end{array}$$

$$10. \quad \begin{array}{l} 7a^2 + 22a + 3 \\ (7a+1)(a+3) \end{array}$$

$$11. \quad \begin{array}{l} 3x^2y - 9xy - 54y \\ 3y(x^2 - 3x - 18) \\ 3y(x-6)(x+3) \end{array}$$

$$12. \quad \begin{array}{l} 4a^2 + 20ab + 25b^2 \\ (2a+5)(2a+5) \end{array}$$

B. Multiply / Expand

1. $(x+1)(x+6)$

$$x^2 + 7x + 6$$

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

$$3x^2 + x + 6x + 2$$

$$3x^2 + 7x + 2$$

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

$$10x^2 + 2x + 5x + 1$$

$$10x^2 + 7x + 1$$

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

$$6x^2 - 3x$$

5. $(2x+1)^2$

$$(2x+1)(2x+1)$$

$$4x^2 + 4x + 1$$

6. $(2x+1)(4x^2-2x+1)$

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

$$8x^3 - 1$$

7. $(3x+1)^2 - (4)(x^2-x+1)$

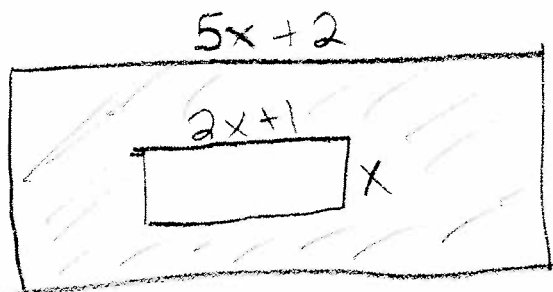
$$(3x+1)(3x+1) - 4[x^2-x+1]$$

$$9x^2 + 6x + 1 - 4x^2 + 4x - 4$$

$$5x^2 + 10x + 5$$

$$5[x^2 + 2x + 1]$$

8. Find the area of the shaded region:



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

$$20x^2 + 15x + 8x + 6 - [2x^2 + x]$$

$$20x^2 + 23x + 6 - 2x^2 - x$$

$$4x+3 \mid 18x^2 + 22x + 6$$