

Review - Test Two

$$3. \quad 2^{-1} + 3^{-1}$$

$$\frac{3 \cdot 1}{3 \cdot 2} + \frac{1 \cdot 2}{3 \cdot 2}$$

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

$$34. \quad 25x^2 + 16 \quad \text{prime}$$

$$25x^2 - 16 = (5x + 4)(5x - 4)$$

$$31. \quad 12a^2 - 10ab - 12b^2 \qquad \frac{-3b}{9,4}$$

$$2(6a^2 - 5ab - 6b^2)^2$$

$$2[6a^2 - 9ab + 4ab - 6b^2]$$

$$2[3a(2a - 3b) + 2b(2a - 3b)]$$

$$2(2a - 3b)(3a + 2b)$$

$$22. \quad 19 + 20m + m^2$$

$$m^2 + 20m + 19$$

$$(m + 1)(m + 19)$$

$$41. \quad 12x^2 + \sqrt{6}x = 20$$

$$12x^2 + \sqrt{6}x - 20 = 0$$

$$4(3x^2 + 14x - \sqrt{6}) = 0$$

$$\frac{-1\sqrt{6}}{1, 1\sqrt{6}}$$

$$4 \left[\underbrace{3x^2 - x}_{\text{blue}} + \underbrace{1\sqrt{6}x - \sqrt{6}}_{\text{green}} \right] = 0$$

$$4 \left[x(\underbrace{3x-1}) + \sqrt{6}(\underbrace{x-1}) \right] = 0$$

$$4(3x-1)(x+\sqrt{6}) = 0$$

$$4=0$$

$$3x-1=0$$

$$x+\sqrt{6}=0$$

X

$$3x=1$$

$$x=-\sqrt{6}$$

$$x=\frac{1}{3}$$

$$37. \quad \sqrt{x(x-3)} = 0$$

$$\sqrt{x} = 0$$

$$x = 0$$

$$x - 3 = 0$$

$$x = 3$$

$$8. \quad \left(\frac{x^{-5} y^3}{x^3 y^9} \right)^3 = \left(\frac{1}{x^8 y^6} \right)^3$$

$$\frac{1}{x^{24} y^{18}}$$

$$10. \quad \frac{(a^3 b^{-6})^{-5}}{(2a^3 b^{-1})^{-2}} = \frac{a^{-15} b^{30}}{2^{-2} a^{-6} b^2}$$

$$\frac{2^2 b^{28}}{a^9} = \frac{4b^{28}}{a^9}$$

$$38. \quad x^2 - 11x + 10 = 0$$

$$(x - 10)(x - 1) = 0$$

$$x - 10 = 0$$

$$x = 10$$

$$x - 1 = 0$$

$$x = 1$$

$$9. \left(\frac{a^{-5} b}{ab^6} \right)^{-3}$$

$$\left(\frac{1}{a^6 b^5} \right)^{-3}$$

$$(a^6 b^5)^3$$

$$a^{18} b^{15}$$

$$32. x^2 - 49$$

$$x^2 - 7^2$$

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

$$29. \quad 16x^3 + 19x^2 + 3x$$

$$x (16x^2 + 19x + 3)$$

$$x [16x^2 + 3x + 16x + 3]$$

$$x [x(16x+3) + 1(16x+3)]$$

$$x (16x+3)(x+1)$$

$$\underline{48}$$

$$3,16$$

$$11. \quad \frac{15x^7 + 9x^6}{x}$$

$$\frac{15x^7}{x} + \frac{9x^6}{x}$$

$$15x^6 + 9x^5$$

$$13. \quad \frac{-15x^6 + 20x^5 - 10}{5x^2}$$

$$\frac{-15x^6}{5x^2} + \frac{20x^5}{5x^2} - \frac{10}{5x^2}$$

$$-3x^4 + 4x^3 - \frac{2}{x^2}$$

$$21. \quad x^2 + 4x + 47 \quad \text{prime}$$

$$(x \quad)(x \quad)$$

$$\frac{47}{1, 47}$$

$$1, 47$$

$$15. \quad y(\underline{x^2+9}) - 2(\underline{x^2+9})$$

$$(x^2+9)(y-2)$$

$$14. \quad 63x^3 + 81x^2 - 45x^4 + 18$$

$$9(7x^3 + 9x^2 - 5x^4 + 2)$$

$$30. \quad 16x^2 - 16x - 12$$

$$\frac{-12}{6, 2}$$

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

$$4 \left[\underbrace{4x^2 - 6x}_{\text{blue}} + \underbrace{2x - 3}_{\text{green}} \right]$$

$$4 \left[2x \underbrace{(2x - 3)}_{\text{blue}} + 1 \underbrace{(2x - 3)}_{\text{green}} \right]$$

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

$$35. \quad 625m^4 - 16$$

$$(25m^2)^2 - 4^2$$

$$(25m^2 + 4)(25m^2 - 4)$$

$$(5m)^2 - 2^2$$

$$(25m^2 + 4)(5m + 2)(5m - 2)$$

$$33. \quad x^2y^2 - 4$$

$$(xy)^2 - 2^2$$

$$(xy + 2)(xy - 2)$$

$$28. \quad \overbrace{3x^2 - 10x + 7}$$

$$\frac{21}{3, 7}$$

$$\underbrace{3x^2 - 3x}_{\text{blue}} - \underbrace{7x + 7}_{\text{green}}$$

$$3x(\underline{x-1}) - 7(\underline{x-1})$$

$$(x-1)(3x-7)$$

$$36. \quad (x-8)(x+8) = 0$$

$$x-8 = 0$$

$$x = 8$$

$$x+8 = 0$$

$$x = -8$$

$$26. \quad \underbrace{y^2 + 7y}_{\text{blue}} \quad \underbrace{- 3y - 21}_{\text{green}}$$

$$y \underbrace{(y+7)}_{\text{purple}} - 3 \underbrace{(y+7)}_{\text{purple}}$$

$$(y+7)(y-3)$$