

44 (#32 and 33 worth 2 pts each)

Review: Book p 264: 24, 32, 40
- p 278: 8, 20, 22, 30, 46

Algebra 2 ~ Assignment 19

NEW Packet: Factor.

1. $8a^2 - 72b^2 = 8(a^2 - 9b^2) = 8(a+3b)(a-3b)$

2. $4n^2 + 20n + 25 = (2n+5)(2n+5)$

3. $6x^2 - 7x - 3 = (3x+1)(2x-3)$

4. $4a^2 + a - 3 = (4a-3)(a+1)$

5. $k^3 - 2kr^2 - 3kr^2 = k(k^2 - 2kr - 3r^2)$
 $= k(k+r)(k-3r)$

6. $3x^2 - 5x + 2 = (3x-2)(x-1)$

7. $xy - y + xz - z = y(x-1) + z(x-1) = (y+z)(x-1)$

8. $5xy - 3y + 10x - 6 = y(5x-3) + 2(5x-3) = (y+2)(5x-3)$

9. $7 - 10x - 7y + 10xy = 1(7-10x) - y(7-10x) = (1-y)(7-10x)$

10. $4ax + 14ay - 10bx - 35by = 2a(2x+7y) - 5b(2x+7y)$
 $= (2a-5b)(2x+7y)$

11. $2x^2 - x - 1 = (2x+1)(x-1)$

12. $xy - xz + 5y - 5z = x(y-z) + 5(y-z) = (x+5)(y-z)$

13. $2ab + 6a - 7b - 21 = 2a(b+3) - 7(b+3) = (2a-7)(b+3)$

14. $ar - ax - 8r + 8x = a(r-x) - 8(r-x) = (a-8)(r-x)$

15. $8c^2 + 14c + 3 = (2c+3)(4c+1)$

16. $3x^2 + 16x - 35 = (3x-5)(x+7)$

17. $4m^6 - 12m^3 + 9 = (2m^3-3)(2m^3-3) = (2m^3-3)^2$

18. $3x^3 + 8x^2 - 15x - 40 = x^2(3x+8) - 5(3x+8) = (x^2-5)(3x+8)$

19. $2m^5 - 12m^3 + 18m = 2m(m^4 - 6m^2 + 9) = 2m(m^2-3)(m^2-3)$

20. $c^4 + c^3 - c^2 - c = c^3(c+1) - c(c+1) = (c^3-c)(c+1)$
 $= c(c^2-1)(c+1)$
 $= c(c+1)(c-1)(c+1)$

REVIEW (No Calculator):

21. Simplify $4(12-5b) - 3(4b-2)$
 $= 48 - 20b - 12b + 6 = 54 - 32b$

22. Solve: $\left| \frac{1}{5}x + \frac{2}{3} \right| = \frac{7}{15}$

$$15 \cdot \frac{1}{5}x + \frac{15 \cdot 2}{3} = \frac{7 \cdot 15}{15} \quad 15 \cdot \frac{1}{5}x + \frac{15 \cdot 2}{3} = \frac{-7 \cdot 15}{15}$$

$$\frac{15}{5}x + \frac{30}{3} = 7$$

$$\frac{15}{5}x + \frac{30}{3} = -7$$

$$\frac{3x + 10}{-10 \quad -10} = 7$$

$$\frac{3x + 10}{-10 \quad -10} = -7$$

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

$$\frac{3x}{3} = \frac{-17}{3}$$

$$x = -1$$

$$x = -\frac{17}{3}$$

23. $(6x - 3y = -15)^2 \rightarrow 12x - 6y = -30$

$(7x + 2y = -12)^3 \rightarrow +21x + 6y = -36$

$$\boxed{(-2, 1)}$$

$$\frac{33x}{33} = \frac{-66}{33}$$

$$x = -2$$

$6(-2) - 3y = -15$

$$\frac{-12 - 3y}{+12} = \frac{-15}{+12}$$

$$\frac{-3y}{-3} = \frac{-3}{-3} \rightarrow y = 1$$

Simplify:

24. $\frac{2x^4y^8}{4xy^8} = \frac{1x^{4-1}}{2} = \frac{x^3}{2}$

25. $(3x^2)^2 \left(\frac{1}{3}y^2\right)^2 = 9x^4 \cdot \frac{1}{9}y^4 = xy^4$

26. $(3a^2)^3 + 2(a^3)^2 = 27a^6 + 2a^6 = 29a^6$

27. $\frac{(-r)^5s^8}{r^5s^2} = \frac{-r^5s^8}{r^5s^2} = -s^{8-2} = -s^6$

28. $\frac{2a^2}{a^{-3}} = 2a^{2+3} = 2a^5$

29. $\left(\frac{2x}{3y^2}\right)^{-4} = \left(\frac{3y^2}{2x}\right)^4 = \frac{3^4y^8}{2^4x^4} = \frac{81y^8}{16x^4}$

30. $\frac{3(a^{-2}b)^4}{(3ab)^3} = \frac{3a^{-8}b^4}{27a^3b^3} = \frac{1a^{-8-3}b^{4-3}}{9} = \frac{a^{-11}b}{9} = \frac{b}{9a^{11}}$

pg 264: 24. $(3r+s) - (r-s) - (r+3s) = 3r+s-r+s-r-3s = \boxed{r-s}$

32. $\frac{2}{3}x^2(6x+9y-12xy^2) = \frac{12}{3}x^3 + \frac{18}{3}x^2y - \frac{24}{3}x^3y^2 = \boxed{4x^3+6x^2y-8x^3y^2}$

40. $(m+7)(m+2) = m^2+2m+7m+14 = \boxed{m^2+9m+14}$

46. $x^{-3}y^2(yx^4 + y^{-1}x^3 + y^{-2}x^2) = x^{-3+4}y^{2+1} + x^{-3+3}y^{-1+2} + x^{-3+2}y^{2-2}$
 $= x^1y^3 + x^0y^1 + x^{-1}y^0 = \boxed{xy^3 + y + \frac{1}{x}}$

pg 278: 8. $m^2-6m+8 = \boxed{(m-4)(m-2)}$

20. $w^2+10w+9 = \boxed{(w+9)(w+1)}$

22. $3x^2-3y^2 = 3(x^2-y^2) = \boxed{3(x+y)(x-y)}$

30. $3ay^2+9a = \boxed{3a(y^2+3)}$

46. $m^4-1 = (m^2+1)(m^2-1) = \boxed{(m^2+1)(m+1)(m-1)}$