

2.1 & 2.2 Review

Factor each completely.

1) $4n^2b + 24nb - 64b$

$4b(n^2 + 6n - 16)$
 $4b(n+8)(n-2)$

2) $6b^2 - 30b - 300$

$6(b^2 - 5b - 50)$
 $6(b-10)(b+5)$

3) $5x^2 + 5x - 30$

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

4) $6x^2 - 78x + 216$

$6(x^2 - 13x + 36)$
 $6(x-9)(x-4)$

$\frac{36}{-9} \times \frac{-4}{-13}$

5) $-b^2 - 2b + 3$

$-(b^2 + 2b - 3)$
 $-(b+3)(b-1)$

6) $n^2 - 16n + 64$

$(n-8)(n-8)$ or $(n-8)^2$

7) $x^2 - 4x - 45$

$(x-9)(x+5)$

8) $-x^3 + 7x^2 + 30x$

$-x(x^2 - 7x - 30)$
 $-x(x-10)(x+3)$

9) $7x^2 + 59x - 36$

$(7x^2 + 63x) - (4x - 36)$
 $7x(x+9) - 4(x-9)$
 $(7x-4)(x+9)$

$\frac{-252}{63} \times \frac{-4}{59}$

10) $2m^4 - 13m^3 + 21m^2$

$m^2(2m^2 - 13m + 21)$
 $(2m^2 - 7m)(m+3)$
 $m(2m-7) - 3(2m-7)$
 $m^2(m-3)(2m-7)$

$\frac{42}{-7} \times \frac{-6}{-13}$

11) $28r^3 - 64r^2 - 60r$

$4r(7r^2 - 16r - 15)$
 $(7r^2 - 21r)(5r - 15)$
 $7r(r-3)5(r-3)$
 $4r(7r+5)(r-3)$

$\frac{-105}{-21} \times \frac{5}{-16}$

12) $7a^2 + 62a - 9$

$(7a^2 + 63a) - (a - 9)$
 $7a(a+9) - 1(a+9)$
 $(7a-1)(a+9)$

$\frac{-63}{63} \times \frac{-1}{62}$

13) $42a^2v - 150av + 72v$

$6v(7a^2 - 25a + 12)$
 $(7a^2 - 21a)(-4a + 12)$
 $7a(a-3) - 4(a-3)$
 $6v(7a-4)(a-3)$

$\frac{84}{-21} \times \frac{-4}{-25}$

14) $2m^2 - 25m + 50$

$(2m^2 - 20m)(-5m + 50)$
 $2m(m-10) - 5(m-10)$
 $(2m-5)(m-10)$

$\frac{100}{-20} \times \frac{-5}{-25}$

$$15) 7n^3 - 15n^2 + 8n$$

$$n(7n^2 - 15n + 8)$$

$$(7n^2 - 7n - 8n + 8)$$

$$7n(n-1) - 8(n-1)$$

$$n(7n-8)(n-1)$$

$$17) 9x^2 + 20x - 10$$

prime

$$\frac{56}{-15}$$

$$\frac{-90}{20}$$

$$16) 18x^3 + 24x^2 + 24x$$

$$6x(3x^2 + 4x + 4)$$

$$\frac{12}{4}$$

$$18) 9p^2x + 17px - 2x$$

$$x(9p^2 + 17p - 2)$$

$$(9p^2 + 18p - p - 2)$$

$$9p(p+2) - 1(p+2)$$

$$x(9p-1)(p+2)$$

$$\frac{-18}{17}$$

$$20) 60bx^2 + 54bx + 36b$$

$$6b(10x^2 + 9x + 6)$$

$$\frac{60}{9}$$

$$19) 4x^2 - 41x + 10$$

$$(4x^2 - 40x - 1x + 10)$$

$$4x(x-10) - 1(x-10)$$

$$(4x-1)(x-10)$$

$$\frac{40}{-41}$$

$$21) 6r^2 + 29r + 30$$

$$(6r^2 + 20r) + (9r + 30)$$

$$2r(3r+10) + 3(3r+10)$$

$$(2r+3)(3r+10)$$

$$23) 10x^2 - 39x + 27$$

$$(10x^2 - 30x) - (9x - 27)$$

$$10x(x-3) - 9(x-3)$$

$$(10x-9)(x-3)$$

$$\frac{180}{29}$$

$$\frac{270}{-39}$$

$$22) -36x^3 - 66x^2 + 432x$$

$$-6x(6x^2 + 11x - 72)$$

$$(6x^2 + 27x - 16x - 72)$$

$$3x(2x+9) - 8(2x+9)$$

$$-6x(3x-8)(2x+9)$$

$$\frac{-432}{11}$$

$$24) -4x^3 - 8x^2 + 45x$$

$$-x(4x^2 + 8x - 45)$$

$$(4x^2 - 10x) + (18x - 45)$$

$$2x(2x-5) + 9(2x-5)$$

$$-x(2x+9)(2x-5)$$

$$\frac{-180}{8}$$