

Math 2 Unit 1

HW 1-1 Factor each expression completely.

1. $4d^4 - 2d^{10} + 12d^5$

$2d^4(2 - d^6 + 6d)$

4. $2x^2 + 4xy - 6x - 12y$

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

7. $2a^2 + 4a + 3ab + 6b$

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

10. $9g^2 - 25$

$(3g-5)(3g+5)$

2. $8x^6 + 2x^5 - 10x^9$

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

5. $2ah + h + 2ab + b$

$h(2a+1) + b(2a+1)$
 $(2a+1)(h+b)$

8. $25d^3 - 100d^2 - d + 4$

$25d^2(d-4) - 1(d-4)$
 $(25d^2-1)(d-4) = (5d-1)(5d+1)(d-4)$

11. $X^4 - 16$

$(X-2)(X+2)(X^2+4)$

3. $24a^2b^5 - 48a^3b^7$

$24a^2b^5(1 - 2ab^2)$

6. $X^2 - 25$

$(X-5)(X+5)$

9. $y^3 - 7y^2 + 4y - 28$

$(y^2+4)(y-7)$

12. $3x^2 - 75$

$3(X-5)(X+5)$

HW 1-2 Factor each expression completely.

1. $x^2 - 18x + 80$

$(x-10)(x-8)$

4. $a^3 - a^2b + ab^2 - b^3$

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

7. $2z^2 - 12z + 18$

$2(z^2 - 6z + 9)$
 $2(z-3)(z-3)$

2. $5x^2y - x^2 + 5y - 1$

$x^2(5y-1) + 1(5y-1)$
 $(5y-1)(x^2+1)$

5. $x^4 - 15x^3 + 56x^2$

$x^2(x^2 - 15x + 56)$
 $x^2(x-8)(x-7)$

8. $c^4 + c^3 - 12c - 12$

$c^3(c+1) - 12(c+1)$
 $(c+1)(c^3-12)$

3. $3y^2 - 15y + 18$

$3(y-6)(y+1)$

6. $k^2 - 8k + 16$

$(k-4)(k-4)$

9. $25y^2 - 100$

$25(y+2)(y-2)$

HW 1-4 Solve each equation by factoring.

1. $x^2 - 4x - 12 = 0$

$(x-6)(x+2) = 0$
 $x = 6, -2$

7. $5w^2 - 35w + 60 = 0$

$5(w^2 - 7w + 12) = 0$
 $5(w-4)(w-3) = 0$
 $w = 4, 3$

13. $6e^3 = 5e^2 + 6e$

$e(6e^2 - 5e - 6) = 0$
 $e(3e+2)(2e-3) = 0$
 $e = 0, -\frac{2}{3}, \frac{3}{2}$

3. $n^2 + 25 = 10n$

$n^2 - 10n + 25 = 0$
 $(n-5)(n-5) = 0$
 $n = 5$

9. $15v^2 + 19v + 6 = 0$

$(5v+3)(3v+2) = 0$
 $v = -\frac{3}{5}, -\frac{2}{3}$

5. $7x^2 = 4x$

$x(7x-4) = 0$
 $x = 0, \frac{4}{7}$

11. $36k^2 = 25$

$(6k-5)(6k+5) = 0$
 $k = \frac{5}{6}, -\frac{5}{6}$

HW1-5 Solve each equation by factoring.

2. $y^2 - 16y + 64 = 0$

4. $9z = 10z^2$

6. $c^2 = 2c + 99$

8. $3d^2 + 24d + 45 = 0$

10. $4j^2 + 6 = 11j$

12. $12m^3 - 8m^2 = 15m$

14. $9 = 64p^2$