Factoring

Continued...

Exercise

1. Factor fully.

a. $p^2 + 2pr + r^2$ b. $16n^2 + 8n + 1$ c. $9u^2 + 30u + 25$

d. $v^2 + 4v + 3$ e. $2w^2 + 3w + 1$ f. $3k^2 + 7k + 2$

g. $7y^2 + 15y + 2$ h. $5x^2 - 16x + 3$ i. $3y^2 - 11y + 10$

2. Factor fully.

a. $25x^2 - y^2$ b. $m^2 - p^2$ c. $1 - 16r^2$

d. $49m^2 - 64$ e. $p^2r^2 - 100x^2$ f. $3 - 48y^2$

g. $(x + n)^2 - 9$ h. $49u^2 - (x - y)^2$ i. $x^4 - 16$

3. Factor fully.

a. $kx + px - ky - py$ b. $fx - gy + gx - fy$ c. $h^3 + h^2 + h + 1$

d. $x - d + (x - d)^2$ e. $4y^2 + 4yz + z^2 - 1$ f. $x^2 - y^2 + z^2 - 2xz$

4. Factor fully.

a. $4x^2 + 2x - 6$ b. $28s^2 + 8st - 20t^2$ c. $y^2 - (r - n)^2$

d. $8 + 24m - 80m^2$ e. $6x^2 - 13x + 6$ f. $y^3 + y^2 - 5y - 5$

g. $60y^2 - 10y - 120$ h. $10x^2 + 38x + 20$ i. $27x^2 - 48$

5. Factor fully.

a. $36(2x - y)^2 - 25(u - 2y)^2$ b. $g(1 - x) - gx + gx^2$

c. $y^5 - y^4 + y^3 - y^2 + y - 1$ d. $n^4 + 2n^2w^2 + w^4$

e. $9(x + 2y + z)^2 - 16(x - 2y + z)^2$ f. $8u^2(u + 1) + 2u(u + 1) - 3(u + 1)$

g. $p^2 - 2p + 1 - y^2 - 2yz - z^2$ h. $9y^4 + 12y^2 + 4$

i. $abx^2 + (an + bm)x + mn$ j. $x^2 + 2 + \frac{1}{x^2}$

Review of Prerequisite Skills

1. a. $(p + r)^2$ b. $(4n + 1)^2$ c. $(3u + 5)^2$ d. $(v + 3)(v + 1)$
e. $(2w + 1)(w + 1)$ f. $(3k + 1)(k + 2)$ g. $(7y + 1)(y + 2)$
h. $(5x - 1)(x - 3)$ i. $(3v - 5)(v - 2)$

2. a. $(5x - y)(5x + y)$ b. $(m - p)(m + p)$ c. $(1 - 4r)(1 + 4r)$
d. $(7m - 8)(7m + 8)$ e. $(pr - 10x)(pr + 10x)$
f. $3(1 - 4y)(1 + 4y)$ g. $(x + n + 3)(x + n - 3)$
h. $(7u + x - y)(7u - x + y)$ i. $(x^2 + 4)(x + 2)(x - 2)$

3. a. $(k + p)(x - y)$ b. $(f + g)(x - y)$ c. $(h + 1)(h^2 + 1)$
d. $(x - d)(1 + x - d)$ e. $(2y + z - 1)(2y + z + 1)$
f. $(x - z - y)(x - z + y)$

4. a. $2(2x + 3)(x - 1)$ b. $4(7s - 5t)(s + t)$
c. $(y + r - n)(y - r + n)$ d. $8(1 + 5m)(1 - 2m)$
e. $(3x - 2)(2x - 3)$ f. $(y + 1)(y^2 - 5)$ g. $10(3y + 4)(2y - 3)$
h. $2(5x^2 + 19x + 10)$ i. $3(3x - 4)(3x + 4)$

5. a. $(12x + 4y - 5u)(12x - 16y + 5u)$ b. $g(1 - x)(1 + x)$
c. $(y - 1)(y^4 + y^2 + 1)$ d. $(n^2 + w^2)^2$
e. $(-x + 14y - z)(7x - 2y + 7z)$ f. $(u + 1)(4u + 3)(2u - 1)$
g. $(p - 1 + y + z)(p - 1 - y - z)$ h. $(3y^2 + 2)^2$
i. $(ax + m)(bx + n)$ j. $\left(x + \frac{1}{x}\right)^2$