Practice Exercises

Factor the following polynomials completely.

1. $4wt + 2wh + 6it + 3ih$
2. $15te - 12he + 10ty - 8hy$
3. $hv + av + he + ae$
4. $10ti - 8ts - 15hi + 12hs$
5. $88fo + 16ro - 99fm - 18rm$

Problem Set

Factor the following polynomials completely.

1. $7am + 35bm + 9ad + 45bd$
2. $42wa + 54wt + 56da + 72dt$
3. $36yw - 24nb + 12bw - 72yn$
4. $72he + 16we + 27hn + 6wn$
5. $26wy - 91by + 35bd - 10wd$
6. $12bc + 15be - 8cd - 10de$
7. $10ep - 25eq + 2fp - 5fq$
8. $8mp - 12mq - 6np + 9nq$
9. $12ax^2 + 15ay + 16b^2x^2 + 20b^2y$
10. $15a^3c^2 - 12a^3d^3 - 10b^2c^2 + 8b^2d^3$

Problem Set

1. $= (7am + 35bm)$
$+ (9ad + 45bd)$
$= 7m(a + 5b)$
$+ 9d(a + 5b)$
$= (a + 5b)(9d + 7m)$

2. $= (42wa + 54wt)$
$+ (56da + 72dt)$
$= 6w(7a + 9t)$
$+ 8d(7a + 9t)$
$= (7a + 9t)(8d + 6w)$
$= 2(7a + 9t)(4d + 3w)$

3. $= (36yw + 12bw)$
$- (24nb + 72yn)$
$= 12w(3y + b)$
$- 24n(b + 3y)$
$= (b + 3y)(-24n + 12w)$
$= 12(b + 3y)(-2n + w)$

4. $= (72he + 16we)$
$+ (27hn + 6wn)$
$= 8e(9h + 2w)$
$+ 3n(9h + 2w)$
$= (9h + 2w)(8e + 3n)$

5. $= (26wy - 91by)$
$+ (35bd - 10wd)$

$$= 13y(2w-7b)$$
$$-5d(-7b+2w)$$
$$= (-7b+2w)(-5d+13y)$$

6. $$= (12bc+15be)$$
$$-(8cd+10de)$$
$$= 3b(4c+5e)$$
$$-2d(4c+5e)$$
$$= (4c+5e)(3b-2d)$$

7. $$= (10ep-25eq)$$
$$+(2fp-5fq)$$
$$= 5e(2p-5q)$$
$$+f(2p-5q)$$
$$= (2p-5q)(5e+f)$$

8. $$= (8mp-12mq)$$
$$-(6np-9nq)$$
$$= 4m(2p-3q)$$
$$-3n(2p-3q)$$
$$= (2p-3q)(4m-3n)$$

9. $$= (12ax^2+15ay)$$
$$+(16b^2x^2+20b^2y)$$
$$= 3a(4x^2+5y)$$
$$+4b^2(4x^2+5y)$$
$$= (4x^2+5y)(3a+4b^2)$$

10. $$= (15a^3c^2-12a^3d^3)$$
$$-(10b^2c^2-8b^2d^3)$$
$$= 3a^3(5c^2-4d^3)$$
$$-2b^2(5c^2-4d^3)$$
$$= (3a^3-2b^2)(5c^2-4d^3)$$