

## A 1. Factor completely, where possible.

- |                 |                  |                       |
|-----------------|------------------|-----------------------|
| (a) $2x + 6$    | (b) $5y - 10$    | (c) $3x + 6y$         |
| (d) $7w - 7$    | (e) $3x + 11$    | (f) $2x^2 - 82$       |
| (g) $3 - 9y$    | (h) $2x^2 + 6x$  | (i) $3x - 5y$         |
| (j) $6y^2 - 7y$ | (k) $10w^2 - 5w$ | (l) $8wx - 12x$       |
| (m) $15x + 10y$ | (n) $7mn - 9x$   | (o) $2tw + 4tx - 6ty$ |

## B 2. Factor completely, where possible.

- |                              |                             |
|------------------------------|-----------------------------|
| (a) $25x^3 + 10x^2 + 15x$    | (b) $y^5 - y^4 + y^3 - y^2$ |
| (c) $36x^5 - 9y^3$           | (d) $12xy + 4wx - 8xz$      |
| (e) $9m^3 - 6m^2t + 3mt^2$   | (f) $7xyz - 14xy + 21txy$   |
| (g) $7pqr - 5xy + 8t$        | (h) $22xy - 11y^2 + 33wy$   |
| (i) $36mn^2 - 24m^2n + 28mn$ | (j) $7rst - 14r^2s^2t$      |

(k)  $18r^2s^3 - 9rs^2 - 27r^3s^2$

(l)  $20m^6n^4 - 30m^5n^5 + 40m^7n^3 - 10m^5n^3$

(m)  $14rst + 17xy - 3w$

(n)  $40x^5y^7 - 32x^7y^6 - 28x^8y^4 - 36x^7y^5$

## 3. Factor.

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|--------------------------------|-------------------------------|
| (a) $3m(x + y) + 2(x + y)$     | (b) $3x(y - 1) + 2(y - 1)$    |
| (c) $9x(m + 3) - 2(m + 3)$     | (d) $5y(m + n) + t(m + n)$    |
| (e) $5w(x - 2) - 3t(x - 2)$    | (f) $2t(x + 5) + (x + 5)$     |
| (g) $4mn(t - 4) - (t - 4)$     | (h) $2m(x + y) + 4(x + y)$    |
| (i) $3xy(m - n) - 6x(m - n)$   | (j) $2(t + 5)^2 - 3(t + 5)$   |
| (k) $5t(2x - 3) - 10m(2x - 3)$ | (l) $4(w + 3)^3 + 5(w + 3)^2$ |

# Solutions

1. (a)  $2(x+3)$  (b)  $5(y-2)$  (c)  $3(x+2)$   
(d)  $7(w-1)$  (f)  $2(x^2-41)$  (g)  $3(1-3y)$   
(h)  $2x(x+3)$  (j)  $y(6y-7)$  (k)  $5w(2w-1)$   
(l)  $4x(2w-3)$  (m)  $5(3x+2y)$  (o)  $2t(w+2x-3y)$

2. (a)  $5x(5x^2+2x+3)$  (b)  $y^2(y^3-y^2+y-1)$  (c)  $9(4x^5-y^3)$   
(d)  $4x(3y+w-2z)$  (e)  $3m(3m^2-2mt+t^2)$  (f)  $7xy(z-2+3t)$   
(h)  $11y(2x-y+3w)$  (i)  $4mn(9n-6m+7)$  (j)  $7rst(1-2rs)$   
(k)  $9rs^2(2rs-1-3r^2)$   
(l)  $10m^5n^3(2mn-3n^2+4m^2-1)$   
(n)  $4x^5y^4(10y^3-8x^2y^2-7x^3-9x^2y)$
3. (a)  $(x+y)(3m+2)$  (b)  $(y-1)(3x+2)$  (c)  $(m+3)(9x-2)$   
(d)  $(m+n)(5y+t)$  (e)  $(x-2)(5w-3t)$  (f)  $(x+5)(2t+1)$   
(g)  $(t-4)(4mn-1)$  (h)  $2(x+y)(m+2)$  (i)  $3x(m-n)(y-2)$   
(j)  $(t+5)(2t+7)$  (k)  $5(2x-3)(t-2m)$  (l)  $(w+3)^2(4w+17)$