$= 3(x - y)(3x - 3y + 2)$

● **EXERCISE 14.1**

1. Find the common factors of the given terms :
   (a) $12x$, 36
   (b) ax^2, $5xa$
   (c) $39y^3 z^4$, $13y^4 z$

2. Factorise the following :
   (a) $12p - 20pq$
   (b) $36y^3 z + 48y^2 z^2$
   (c) $35m^2 n^2 + 10mnp - 15n^2 p^2$
   (d) $12a^3 - 15a^2 - 7a$
   (e) $12ab + 16ab^2 + 20a^2 b^2$
   (f) $-10a^2 b^2 + 15ab^2 c - 25abc^3$

3. Factorise the following expressions into factors :
   (a) $x(a - 1) + y(a - 1)$
   (b) $2a(x - 2y) - (x - 2y)$
   (c) $8(p - q)^3 - 12(p - q)^2$
   (d) $a^3(2x - 3) - a^2(2x - 3)$
   (e) $6(2q - p) + 4(p - 2q)^2$
   (f) $16(m + n)^3 + 16(m + n)^2$

4. Factorise using suitable grouping :
   (a) $4x^2 + 2y^2 + x^2 y^2 + 8$
   (b) $p^2 q - pr^2 - pq + r^2$
   (c) $6xy - y^2 + 12xz - 2yz$
   (d) $ax^2 + by^2 + bx^2 + ay^2$
   (e) $15mn - 6m + 5n - 2$
   (f) $6xy - 4y + 6 - 9x$

form $ax^2 + bx + c$.

the given expression is of the

$$= -3 [9y^2 + 6y - 3y - 2]$$
$$= -3 [3y (3y + 2) - 1 (3y + 2)]$$
$$= -3 (3y + 2) (3y - 1)$$

● **EXERCISE 14.2**

1. Factorise the following expressions using identities :

(a) $25m^2 + 40m + 16$

(b) $16x^2 + 25 + 40x$

(c) $49x^4 - 168x^2 y^2 + 144y^4$

(d) $\dfrac{x^2}{4y^2} - \dfrac{1}{3} + \dfrac{y^2}{9x^2}$

(e) $p^6 - 4p^3 + 4$

(f) $1 - 8xy + 16x^2 y^2$

2. Using identities, factorise the following :

(a) $25x^2 - 16y^2$

(b) $m^2 - \dfrac{n^2}{100}$

(c) $2x^4 - 32$

(d) $(m + n)^2 - 4mn$

(e) $(x + y)^2 - (x - y)^2$

(f) $(x - 2y)^2 + 8xy$

3. Factorise by splitting the middle terms :

(a) $x^2 + 7x + 12$

(b) $y^2 + 19y - 150$

(c) $x^2 - x - 156$

(d) $2x^2 + 7xy - 15y^2$

(e) $2a^3 + 10a^2 - 28a$

(f) $48 + 22x - x^2$

(g) $x^2 - 4x - 77$

(h) $4x^2 - 7x - 15$

(i) $8x^2 - 22xy + 15y^2$