SOLUTION

1. 3(x + 5)

- = 3 × x + 3 × 5
- = 3x + 15

2. -4(y - 10)

- = -4y + 40

3. (2m + 5)(3m - 2)

Solution

- = 2m(3m - 2) + 5(3m - 2)
- = $6m^2$ - 4m + 15m - 10
- = $6m^2$ + 11m - 10

4. 7(p + 3)(2p - 4)

Solution

- = (7p + 21)(2p - 4)
- = 7p(2p - 4) + 21(2p - 4)
- = $14p^2$ - 28p + 42p - 84

- = $14p^2 + 14p - 84$

5. $-5(3x - 1)(5x - 2) - (x + 2)^2$

- = $(-15x + 5)(5x - 2) - (x + 2)^2$
- = $-75x^2 + 30x + 25x - 10 - (x + 2)(x + 2)$
- = $-75x^2 + 55x - 10 - (x^2 + 2x + 2x + 4)$
- = $-75x^2 + 55x - 10 - (x^2 + 4x + 4)$
- = $-75x^2 + 55x - 10 - x^2 - 4x - 4$
- = $-76x^2 + 51x - 14$

SOLUTION (Continued)

2) Fully factor the following

a $10k^2 - 6k^3$

- = $2k^2[5 - 3k]$

b $4(x + 2) - x(x + 2)$

Solution

- = $(x + 2)(4 - x)$

c $y^2 - 6y - 27$

- = $y^2 - 9y + 3y - 27$

- = $(y^2 - 9y) + (3y - 27)$
- = $y(y - 9) + 3(y - 9)$
- = $(y + 3)(y - 9)$

d $2d^2 - 22d + 56$

Solution

- = $2d^2 - 8d - 14d + 56$
- = $(2d^2 - 8d) - (14d - 56)$
- = $2d(d - 4) - 14(d - 4)$
- = $(2d - 14)(d - 4)$

e $bx^2 + 10bx - 24b$

- = $bx^2 + 12bx - 2bx - 24b$
- = $(bx^2 + 12bx) - (2bx + 24b)$
- = $bx(x + 12) - 2b(x + 12)$
- = $(bx - 2b)(x + 12)$