

Special Products and Factoring

8.2 Factoring Expressions with Common Factors.

$$1. 12x + 18y = 6(2x + 3y)$$

$$2. 3x^2 - 5x = x(3x - 5)$$

$$4. \underset{5xx}{5x^2} + 10x = 5x(x + 2)$$

$$5. 8abc - 12ab = 4ab(2c - 3)$$

$$6. \underset{3y}{3y^2} + \underset{3y}{18y} = 3y(y + 6)$$

$$8. 4a^3 - 8a^2 = 4a^2(a - 2)$$

$$10. 33ab - 22b = 11b(3a - 2)$$

$$12. 27a^2b^2 - 18ab + 9b = 9b(3a^2b - 2a + 1)$$

$$15. 10x + 15 = 5(2x + 3)$$

$$17. 2mn - n = n(2m - 1)$$

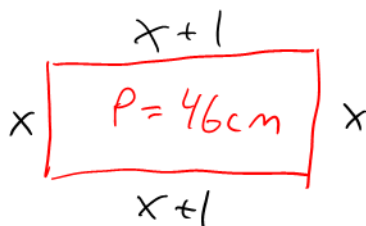
You do: 19, 21, 23, 25 on the boards.

$$27. 12x^3 - 6x^2 + 24x = 6x(2x^2 - x + 4)$$

$$29. 24x^4y - 18x^3y + 12x^2y^2 \\ = 6x^2y(4x^2 - 3x + 2y)$$

$$31. 25m^3n - 15m^2n^2 + 5mn^3 \\ = 5mn(5m^2 - 3mn + n^2)$$

33.



A rectangle is shown with its top side labeled $x+1$ and its right side labeled x . Inside the rectangle, the text $P = 46 \text{ cm}$ is written. The bottom side is also labeled $x+1$.

$$P = l + w + l + w$$

$$P = 2l + 2w$$

$$P = 2(l + w)$$

$$46 = 2(x+1 + x)$$

$$46 = 2(2x+1)$$

$$46 = 4x + 2$$

$$\frac{44}{4} = \frac{4x}{4}$$

$$11 = x$$

∴ the dimensions
are 11 cm and
12 cm.

$$34 a) \underline{(a+b)x} + \underline{(a+b)y} \\ = (a+b)(x+y)$$

$$b) x\underline{(x-2)} + 3\underline{(x-2)} \\ = (x-2)(x+3)$$

8.3 Binomial Products.

$$\begin{aligned} 6. \quad & x(2x+3) \\ & = 2x^2 + 3x \end{aligned}$$

$$\begin{aligned} 10. \quad & -2x(3x+5y) \\ & = -6x^2 - 10xy \end{aligned}$$

$$\begin{aligned} 11. \quad & (x+1)(x+2) \\ & = x(x+1) + 2(x+1) \\ & = x^2 + \underbrace{x + 2x}_{3x} + 2 \\ & = x^2 + 3x + 2 \end{aligned}$$

$$\begin{aligned} 15. \quad & (x-4)(x-3) \\ & = x(x-4) - 3(x-4) \\ & = x^2 - \underbrace{4x - 3x}_{-x} + 12 \\ & = x^2 - 7x + 12 \end{aligned}$$

First
Outside
Inside
Last

$$\begin{aligned} 19. \quad & (x-6)(x+3) \\ & = x^2 + \underline{3x - 6x} - 18 \\ & = x^2 - 3x - 18 \end{aligned}$$

$$\begin{aligned} 21. \quad & (t+10)(t-10) \\ & = t^2 - \underline{10t + 10t} - 100 \\ & = t^2 - 100 \end{aligned}$$

HW: Pg 278 ALL

Pg 280 #3-22