

TT 10. *Foundations and Pre-calculus Mathematics 10* (Pearson), questions 4.c), 4.d), 8.a), 8.c), 8.f), 13.b), and 18 on pages 194 and 195 **Possible Solutions**

$$\begin{aligned} 4. \quad \text{c)} \quad (5 + d)^2 &= 5^2 + 2(5)(d) + d^2 \\ &= 25 + 10d + d^2 \end{aligned}$$

$$\begin{aligned} \text{d)} \quad (7 - f)^2 &= 7^2 + 2(7)(-f) + f^2 \\ &= 49 - 14f + f^2 \end{aligned}$$

$$8. \quad \text{a)} \quad 4x^2 - 12x + 9 = (2x - 3)^2$$

Check:

$$\begin{aligned} (2x - 3)(2x - 3) &= 2x(2x - 3) - 3(2x - 3) \\ &= 4x^2 - 6x - 6x + 9 \\ &= 4x^2 - 12x + 9 \end{aligned}$$

$$\text{c)} \quad 81 - 36v + 4v^2 = (9 - 2v)^2$$

Check:

$$\begin{aligned} (9 - 2v)(9 - 2v) &= 9(9 - 2v) - 2v(9 - 2v) \\ &= 81 - 18v - 18v + 4v^2 \\ &= 81 - 36v + 4v^2 \end{aligned}$$

$$\text{f)} \quad 49r^2 - 28r + 4 = (7r - 2)^2$$

Check:

$$\begin{aligned} (7r - 2)(7r - 2) &= 7r(7r - 2) - 2(7r - 2) \\ &= 49r^2 - 14r - 14r + 4 \\ &= 49r^2 - 28r + 4 \end{aligned}$$

13. b) Factor out the GCF first.

$$\begin{aligned} 8z^2 + 8yz + 2y^2 &= 2(4z^2 + 4yz + y^2) \\ &= 2(2z + y)^2 \end{aligned}$$

Check:

$$\begin{aligned} 2(2z + y)(2z + y) &= 2[2z(2z + y) + y(2z + y)] \\ &= 2(4z^2 + 2yz + 2yz + y^2) \\ &= 2(4z^2 + 4yz + y^2) \\ &= 8z^2 + 8yz + 2y^2 \end{aligned}$$

18. $(3x + 5)^2 - (2x - 1)^2 = (3x)^2 + 2(3x)(5) + 5^2 - [(2x)^2 + 2(2x)(-1) + (-1)^2]$
 $= 9x^2 + 30x + 25 - (4x^2 - 4x + 1)$
 $= 9x^2 + 30x + 25 - 4x^2 + 4x - 1$
 $= 5x^2 + 34x + 24$