

HWU1

p 303

9. $x=0, x=6$

10. $x=0, x=-3, x=\pm 1$

11. $x=2, x=-4$

12. $x=-5, x=8$

13. $x=-6, x=\pm i$

15. $\frac{\pm 2, \pm 1}{\pm 1} = 2, 1, -2, -1$

16. $\pm 1, \pm 4, \pm 16, \pm 2, \pm 8$

17. $\frac{\pm 1, \pm 45, \pm 3, \pm 15, \pm 9, \pm 5}{\pm 2, \pm 1}$

$$= \pm \frac{1}{2}, \pm \frac{45}{2}, \pm \frac{3}{2}, \pm \frac{15}{2}, \pm \frac{9}{2}, \pm \frac{5}{2}$$

$$\pm 1, \pm 45, \pm 3, \pm 15, \pm 9, \pm 5$$

19. $\pm 1, \pm 2, \pm 3, \pm 6$

$$\begin{array}{r|rrrr} \#2 & 1 & -6 & 11 & -6 \\ & \downarrow & *2 & \cancel{11}^{-8} & 6 \\ \hline & 1 & -4 & 3 & 0 \end{array}$$

~~$(x-2)(x^2-4x+3)$~~

$(x-2)(x-3)(x-1)$

$x=2, x=3, x=1$

20. $\pm 1, \pm 2, \pm 3, \pm 6$

$$\begin{array}{r|rrrr} -2 & 1 & 0 & -7 & -6 \\ & \downarrow & -2 & 4 & 6 \\ \hline & 1 & -2 & -3 & 0 \end{array}$$

$(x+2)(x^2+2x-3)$

$(x+2)(x+3)(x-1)$

$x=-2, -3, 1$

25. $\frac{\pm 1}{\pm 1, \pm 2} = \pm 1, \pm \frac{1}{2}$

$$\begin{array}{r|rrrr} \frac{1}{2} & 2 & 3 & 0 & -1 \\ & \downarrow & 1 & 2 & 1 \\ \hline & 2 & 4 & 2 & 0 \end{array}$$

$2x^2+4x+2$

$2(x^2+2x+1)$

$2(x+1)(x+1)$

$x=\frac{1}{2}, -1$



$$26. \frac{\pm 1 \pm 3 \pm 9}{\pm 1 \pm 3}$$

$$= \pm 1, \pm 3, \pm 9, \pm \frac{1}{3}, \dots$$

$$\begin{array}{r|rrrr} 3 & 3 & -19 & 33 & -9 \\ & \downarrow & 9 & -30 & 9 \\ \hline & 3 & -10 & 3 & 0 \end{array}$$

$$\overbrace{3x^2 - 10x + 3} \quad \left. \begin{array}{l} ac=9 \\ b=-10 \end{array} \right\} -9, -1$$

$$\begin{aligned} & 3x^2 - 9x - x + 3 \\ & 3x(x-3) - 1(x-3) \end{aligned}$$

$$(3x-1)(x-3)$$

$$\boxed{x = \frac{1}{3}, 3}$$