

1 Pure Mathematics 1 – Part 1 — Answers

Answers

1.1 $x^2 - 8x + 3 = (x - 4)^2 - 16 + 3 = (x - 4)^2 - 13.$

1.2 $(3, -4).$

1.3 $\Delta = 3^2 - 4(2)(1) = 9 - 8 = 1 > 0$, so **two** real roots.

1.4 $\Delta = (-4)^2 - 4(1)(4) = 16 - 16 = 0$, so **one** (repeated) real root.

1.5 $(x - 2)(x - 3) = 0$, so $x = 2$ or $x = 3$.

1.6 One repeated root needs $\Delta = 0$: $k^2 - 4(1)(9) = 0$, so $k^2 = 36$ and $k = \pm 6$.