Year 9 Equations and Inequalities – Foundation

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Answers and worked solutions · 10 questions

A. Equation skills

1. **$n = \sqrt{(m/k)}$**

Undo the operations on n in reverse order, using a root to undo a power

$n = \sqrt{(m/k)}$

2. **$h = \sqrt[3]{(V/4)}$**

Undo the operations on h in reverse order, using a root to undo a power

$h = \sqrt[3]{(V/4)}$

3. **$x = 1$**

Multiply both sides by 6

$2(5x - 8) = 3(3x - 5)$; $x = 1$

4. **$x = 3$**

Multiply both sides by 10

$2(4x + 8) = 5(x + 5)$; $x = 3$

5. **$x = 6$**

Multiply by $(x + 3)$: $63 = 7(x + 3)$

$x + 3 = 9$, so $x = 6$

6. **$x = 0, y = -3$**

Add the equations to eliminate y

$x = 0$; substitute to find $y = -3$

7. **$x = -1, y = -1$**

Match the y terms, then eliminate y

$x = -1$; substitute to find $y = -1$

8. **$x > 0$**

Subtract 1x: $4x + 4 > 4$

$4x > 0$

$x > 0$

9. **$-2 < t < 1$**

A filled circle means the value is included (≤ or ≥); an open circle means it is not (< or >)

$-2 < t < 1$

10. **$V = 12b^2$**

Volume = area of base × height

$= b^2 \times 12 = 12b^2$