



eClassroom

GCSE Mathematics

Rearranging Formulae

Worked Solutions

Pearson Edexcel GCSE & iGCSE Mathematics



Section A — Foundation — Worked Solutions

[Fluency] Question 1

$$y - 2 = 3x \Rightarrow x = \frac{y-2}{3}$$

∴

[Fluency] Question 2

$$r^2 = \frac{A}{\pi} \Rightarrow r = \sqrt{\frac{A}{\pi}}$$

∴

[Fluency] Question 3

$$P - 2W = 2l \Rightarrow l = \frac{P-2W}{2}$$

∴

[Fluency] Question 4

$$v - u = at \Rightarrow t = \frac{v-u}{a}$$

∴

[Fluency] Question 5

$$2A = bh \Rightarrow b = \frac{2A}{h}$$

∴

[Reasoning] Question 6

$$2E = mv^2 \Rightarrow v^2 = \frac{2E}{m} \Rightarrow v = \sqrt{\frac{2E}{m}}$$

∴



**[Reasoning] Question 7**

$$h = \frac{V}{\pi r^2}$$

$$h = \frac{50\pi}{\pi \times 25} = 2$$

$$\therefore h = V/(\pi r^2) \quad h = 2$$

[Reasoning] Question 8

$$3x - 5x = 4 + 2y \Rightarrow -2x = 2y + 4 \Rightarrow x = \frac{-2y - 4}{2} = -y - 2$$

$$\therefore x = -y - 2$$

[Problem Solving] Question 9

$$u^2 = v^2 - 2as \Rightarrow u = \sqrt{v^2 - 2as}$$

\therefore

[Problem Solving] Question 10

$$r^2 = \frac{S}{4\pi} \Rightarrow r = \sqrt{\frac{S}{4\pi}}$$

$$r = \sqrt{\frac{100}{4\pi}} = \sqrt{\frac{25}{\pi}} \approx 2.82 \text{ cm}$$

$$\therefore r = \sqrt{(S/4\pi)} \quad r \approx 2.82 \text{ cm}$$





Section B — Higher — Worked Solutions

[Fluency] Question 1

$$ax - cx = t - b \Rightarrow x(a - c) = t - b$$

\therefore

[Fluency] Question 2

$$y(x - b) = x + a \Rightarrow yx - yb = x + a \Rightarrow x(y - 1) = a + by$$

\therefore

[Fluency] Question 3

$$\frac{1}{u} = \frac{1}{f} - \frac{1}{v} = \frac{v - f}{fv}$$

\therefore

[Reasoning] Question 4

$$x + a = b^2 \Rightarrow x = b^2 - a$$

\therefore

[Reasoning] Question 5

$$r^2 = \frac{2A}{\theta} \Rightarrow r = \sqrt{\frac{2A}{\theta}}$$

\therefore

[Reasoning] Question 6

$$\frac{bx + ax}{ab} = 1 \Rightarrow x(a + b) = ab$$

\therefore

[Reasoning] Question 7

$$\frac{1}{2}at^2 + ut - s = 0 \Rightarrow t = \frac{-u \pm \sqrt{u^2 + 2as}}{a}$$

\therefore



**[Problem Solving] Question 8**

$$y(x - 1) = 2x + 3 \Rightarrow yx - y = 2x + 3 \Rightarrow x(y - 2) = 3 + y$$

\therefore

[Problem Solving] Question 9

$$b(x + 1) = a(x - 2) \Rightarrow bx + b = ax - 2a \Rightarrow x(b - a) = -2a - b$$

\therefore

[Problem Solving] Question 10

$$\frac{T}{2\pi} = \sqrt{\frac{l}{g}} \Rightarrow \frac{T^2}{4\pi^2} = \frac{l}{g} \Rightarrow l = \frac{gT^2}{4\pi^2}$$

$$l = \frac{9.8 \times 4}{4\pi^2} = \frac{9.8}{\pi^2} \approx 0.993 \text{ m}$$

$$\therefore l = \frac{gT^2}{4\pi^2} \quad l \approx 0.993 \text{ m}$$

