

Rearranging Formulae

Please write clearly in block capitals

Forename:

Surname:

Materials

For this paper you must have:

- mathematical instruments



You **can** use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

1 Rearrange the following equations to make x the subject. (Level 4)
For all questions, give your answer in its simplest form.

1(a) $3x = 8$ [1 mark]

Answer _____

1(b) $5x = 2y$ [1 mark]

Answer _____

1(c) $\frac{5}{x} = 2y$ [1 mark]

Answer _____

1(d) $10 - x = 5$ [1 mark]

Answer _____

Turn over for next question

2(a) Rearrange $b - 2x = n$ to make b the subject.

(Level 4)

[1 mark]

Answer _____

2(b) Rearrange $t^2 = 3x + 1$ to make x the subject.

[1 mark]

Answer _____

2(c) Rearrange $3p + 4 = 6 - q$ to make q the subject.
Simplify your answer.

[1 mark]

Answer _____

2(d) Given $\sqrt{x - 2} = 3a$ find x in terms of a

[2 marks]

Answer _____

Turn over for next question

3(a) Make S the subject of $2S + 3 = T - 5$

(Level 5)

[2 marks]

Answer _____

3(b) Make y the subject of $\frac{3+x}{y} = 2x + 1$

[2 marks]

Answer _____



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4(a) Rearrange $m(x + 3) = 2 + x$ to make m the subject.

(Level 5)

[1 mark]

Answer _____

4(b) Rearrange $2px + 3p = 1 + 2x$ to make p the subject.

[2 marks]

Answer _____

4(c) Rearrange $2mx + 10 = 3x + m$ to make x the subject.

[3 marks]

Answer _____

Turn over for next question

5 Rearrange the formula below to make m the subject.

(Level 6)

$$n = \frac{m - 4}{m + 3}$$

Show all your working clearly.

[4 marks]

Answer _____

6 Rearrange the formula below to make x the subject.

(Level 6)

$$y + 1 = \frac{2x - 10}{x + 1}$$

Show all your working clearly.

[4 marks]

Answer _____

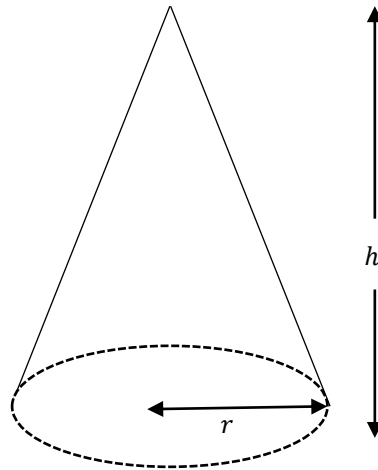
Turn over for next question

7

The formula for the volume of a cone, $V \text{ cm}^3$, is shown below

(Level 6)

$$V = \frac{1}{3}\pi r^2 h$$



Not drawn
accurately

Given that the height of the cone is twice the radius, find r in terms of V .

[3 marks]

Answer _____



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