

Name

Class

MATHS TEACHER HUB

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Solving equations

(9 – 1) Topic booklet

These questions have been collated from previous years GCSE Mathematics papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- If the question is a **1F** question you are not allowed to use a calculator.
- If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

Information

- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL questions
Write your answers in the space provided.
You must write down all the stages in your working.

3 Solve $\frac{y}{4} = 10.5$

$y = \dots\dots\dots$

November 2017 – Paper 1F

(Total for Question 3 is 1 mark)

3 Solve $\frac{x}{5} = 2\frac{1}{2}$

$x = \dots\dots\dots$

(1)

June 2017 – Paper 1F

(Total for Question 3 is 1 mark)

7 (a) Solve $f + 2f + f = 20$

$$f = \dots\dots\dots$$

(1)

(b) Solve $18 - m = 6$

$$m = \dots\dots\dots$$

(1)

Specimen 1 – Paper 3F

(Total for Question 7 is 2 marks)

8 (a) Solve $m - 3 = 4$

$$m = \dots\dots\dots$$

(1)

(b) Solve $3n + n = 24$

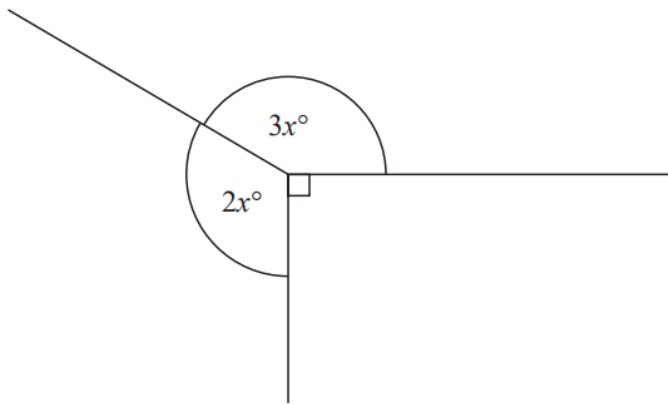
$$n = \dots\dots\dots$$

(2)

November 2022 – 1F

(Total for Question 8 is 3 marks)

9



Find the value of x .

June 2017 – Paper 2F

(Total for Question 9 is 3 marks)

10 (a) Solve $3m = 36$

$m =$
(1)

(b) Solve $7 - x = 3$

$x =$
(1)

May 2020 – Paper 2F

(Total for Question 10 is 2 marks)

10 (a) Solve $t + t + t = 12$

$$t = \text{.....}$$

(1)

(b) Solve $x - 2 = 6$

$$x = \text{.....}$$

(1)

(c) Solve $6w + 2 = 20$

$$w = \text{.....}$$

(2)

June 2019 – Paper 1F

(Total for Question 10 is 4 marks)

10 Solve $3x + 7 = 1$

$$x = \text{.....}$$

(2)

Specimen 2 – Paper 1F

(Total for Question 10 is 2 marks)

10 Solve $3x - 5 = 9$

$x = \dots\dots\dots$
(2)

Sample 1 – Paper 2F

(Total for Question 10 is 2 marks)

11 (a) Solve $x + x + x = 51$

$x = \dots\dots\dots$
(1)

(b) Solve $\frac{y}{4} = 3$

$y = \dots\dots\dots$
(1)

(c) Solve $2f + 7 = 18$

$f = \dots\dots\dots$
(1)

May 2018 – Paper 2F

(Total for Question 11 is 3 marks)

14 Solve $5(2m - 6) = 40$

$$m = \dots\dots\dots$$

(3)

November 2022 – 2F

(Total for Question 14 is 3 marks)

14 Solve $5p + 7 = 22$

$p = \dots\dots\dots$
(2)

May 2020 – Paper 3F

(Total for Question 14 is 2 marks)

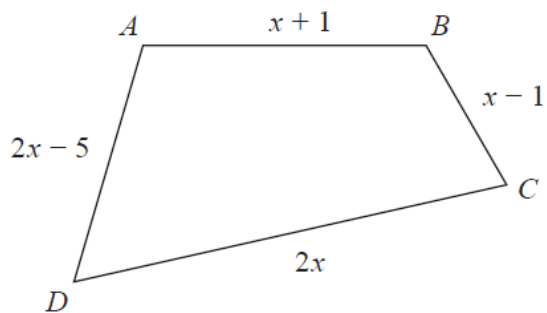
15 Solve $4x - 7 = 37$

$x = \dots\dots\dots$
(2)

November 2021 – Paper 1F

(Total for Question 15 is 2 marks)

16 Here is a quadrilateral $ABCD$.



All the measurements are in centimetres.

The perimeter of $ABCD$ is 52 centimetres.

Work out the length of DC .

..... centimetres

16 Solve $3(m - 4) = 21$

$m = \dots\dots\dots$
(2)

May 2018 – Paper 1F

(Total for Question 16 is 2 marks)

16 (a) Solve $4c + 5 = 11$

$c = \dots\dots\dots$
(2)

(b) Solve $5(e + 7) = 20$

$e = \dots\dots\dots$
(2)

Specimen 1 – Paper 2F

(Total for Question 16 is 4 marks)

16 Solve $5x - 6 = 3(x - 1)$

$x =$

November 2017 – Paper 2F

(Total for Question 16 is 3 marks)

17 Solve $5p = 3p + 8$

$p =$
(2)

Specimen 2 – Paper 2F

(Total for Question 17 is 2 marks)

17 Solve $2(5x - 4) = 21$

$x =$
(3)

November 2021 – Paper 3F

(Total for Question 17 is 3 marks)

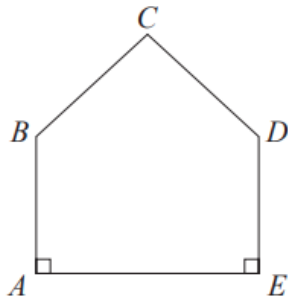
17 Solve $\frac{3y}{4} = 12$

$y = \dots\dots\dots$
(2)

June 2022 – Paper 3F

(Total for Question 17 is 4 marks)

- 17 The diagram shows a pentagon.
The pentagon has one line of symmetry.



$$AE = 4x$$

$$AB = 2x + 1$$

$$BC = x + 2$$

All these measurements are given in centimetres.

The perimeter of the pentagon is 18 cm.

- (a) Show that $10x + 6 = 18$

(3)

- (b) Find the value of x .

$$x = \dots\dots\dots$$

(2)

19 Solve $7(f - 5) = 28$

$$f = \text{.....}$$

(2)

May 2020 – Paper 1F

(Total for Question 19 is 2 marks)

19 Solve $3(x - 4) = 12$

$x = \dots\dots\dots$
(2)

November 2018 – Paper 2F

(Total for Question 19 is 2 marks)

19 Solve $4(x - 6) = 44$

$x = \dots\dots\dots$

November 2019 – Paper 3F

(Total for Question 19 is 2 marks)

19 Solve $4(x - 5) = 18$

$x = \dots\dots\dots$

(2)

June 2017 – Paper 1F

(Total for Question 19 is 2 marks)

19 Solve $4x + 5 = x + 26$

$x = \dots\dots\dots$

Sample 1 – Paper 1F

(Total for Question 19 is 2 marks)

24 Solve $2x^2 = 72$

.....
(2)

November 2017 – Paper 2F

(Total for Question 24 is 2 marks)

24 Solve $x^2 + 5x - 24 = 0$

.....
June 2017 – Paper 2F

(Total for Question 24 is 3 marks)

25 Solve $\frac{5-x}{2} = 2x-7$

$x = \dots\dots\dots$

May 2018 – Paper 3F

(Total for Question 25 is 3 marks)

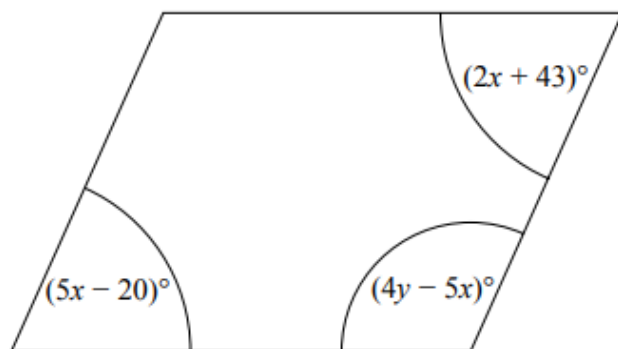
27 Solve $x^2 - 7x - 18 = 0$

$\dots\dots\dots$

November 2021 – Paper 1F

(Total for Question 27 is 3 marks)

28 Here is a parallelogram.



Work out the value of x and the value of y .

$x =$

$y =$