JP Maths Revision

Attempt the paper before watching the solutions!

https://www.youtube.com/@JPMathsRevision

FOUNDATION / HIGHER TIER

Changing the Subject

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.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

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.

You've got this!

1. Make x the subject:

$x + 7 = y$

$x = y - 7$

$x = y - 7$

(Total for Question 1 is 1 mark)

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2. Make a the subject:

$b = a - 4$

$a = b + 4$

$a = b + 4$

(Total for Question 2 is 1 mark)

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3. Make m the subject:

$n = 3m$

$m = \frac{n}{3}$

(Total for Question 3 is 1 mark)

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4. Make p the subject:

$q = \frac{p}{5}$

$p = 5q$

(Total for Question 4 is 1 mark)

5. Make x the subject:

$y = x + 12$

$x = y - 12$

.....

(Total for Question 5 is 1 mark)

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6. Make x the subject:

$y = 2x + 5$

$y - 5 = 2x$

$x = \frac{y-5}{2}$

$x = \frac{y-5}{2}$

.....

(Total for Question 6 is 2 marks)

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7. Make a the subject:

$b = 4a - 7$

$4a = b + 7$

$a = \frac{b+7}{4}$

$a = \frac{b+7}{4}$

.....

(Total for Question 7 is 2 marks)

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8. Make m the subject:

$n = \frac{m}{3} + 8$

$\frac{m}{3} = n - 8$

$m = 3(n-8)$

$m = 3n - 24$

$m = 3n - 24$

.....

(Total for Question 8 is 2 marks)

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9. Make p the subject:

$q = 6 - 2p$

$2p + q = 6$

$2p = 6 - q$

$p = \frac{6-q}{2}$

$q = \frac{6-q}{2}$

(Total for Question 9 is 2 marks)

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10. Make x the subject:

$y = \frac{x+4}{3}$

$3y = x + 4$

$x = 3y - 4$

$x = 3y - 4$

(Total for Question 10 is 2 marks)

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11. Make x the subject:

$y = \frac{x}{4} - 3$

$y + 3 = \frac{x}{4}$

$x = 4y + 12$

$x = 4y + 12$

(Total for Question 11 is 2 marks)

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12. Make a the subject:

$b = \frac{a+7}{5}$

$5b = a + 7$

$a = 5b - 7$

$a = 5b - 7$

(Total for Question 12 is 2 marks)

13. Make m the subject:

$$n = \frac{2m - 3}{6}$$

$6n = 2m - 3$

$6n + 3 = 2m$

$m = \frac{6n + 3}{2}$

$m = \frac{6n + 3}{2}$

(Total for Question 13 is 2 marks)

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14. Make x the subject:

$$y = \frac{5 - x}{2}$$

$2y = 5 - x$

$2y + x = 5$

$x = 5 - 2y$

$x = 5 - 2y$

(Total for Question 14 is 2 marks)

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15. Make p the subject:

$$q = \frac{3p + 1}{4}$$

$4q = 3p + 1$

$4q - 1 = 3p$

$p = \frac{4q - 1}{3}$

$p = \frac{4q - 1}{3}$

(Total for Question 15 is 2 marks)

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16. Make x the subject:

$$y = x + a$$

$x = y - a$

(Total for Question 16 is 2 marks)

17. Make x the subject:

$y = 3x + b$

$y - b = 3x$

$x = \frac{y-b}{3}$

$x = \frac{y-b}{3}$

(Total for Question 17 is 2 marks)

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18. Make x the subject:

$y = ax + 4$

$y - 4 = ax$

$x = \frac{y-4}{a}$

$x = \frac{y-4}{a}$

(Total for Question 18 is 2 marks)

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19. Make x the subject:

$y = 5x - c$

$y + c = 5x$

$x = \frac{y+c}{5}$

$x = \frac{y+c}{5}$

(Total for Question 19 is 2 marks)

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20. Make x the subject:

$y = \frac{x + a}{3}$

$3y = x + a$

$x = 3y - a$

$x = 3y - a$

(Total for Question 20 is 2 marks)

21. Make x the subject:

$y = ax + b$

$y - b = ax$

$x = \frac{y-b}{a}$

$x = \frac{y-b}{a}$

(Total for Question 21 is 2 marks)

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22. Make x the subject:

$y = \frac{x+b}{a}$

$ay = x + b$

$x = ay - b$

$x = ay - b$

(Total for Question 22 is 2 marks)

---

23. Make x the subject:

$y = \frac{a}{x}$

$xy = a$

$x = \frac{a}{y}$

$x = \frac{a}{y}$

(Total for Question 23 is 2 marks)

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24. Make x the subject:

$y = \frac{ax+b}{c}$

$cy = ax + b$

$ax = cy - b$

$x = \frac{cy-b}{a}$

$x = \frac{cy-b}{a}$

(Total for Question 24 is 3 marks)

25. Make r the subject:

$A = \pi r^2$

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

$r = \sqrt{\frac{A}{\pi}}$

$r = \sqrt{\frac{A}{\pi}}$

(Total for Question 25 is 2 marks)

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26. Make h the subject:

$V = \pi r^2 h$

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

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

(Total for Question 26 is 3 marks)

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27. Make x the subject:

$y = \sqrt{x + 5}$

$y^2 = x + 5$

$x = y^2 - 5$

$x = y^2 - 5$

(Total for Question 27 is 2 marks)

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28. Make r the subject:

$V = \frac{4}{3}\pi r^3$

$\frac{3}{4}V = \pi r^3$

$\frac{3V}{4\pi} = r^3$

$r = \sqrt[3]{\frac{3V}{4\pi}}$

$r = \sqrt[3]{\frac{3V}{4\pi}}$

(Total for Question 28 is 3 marks)

29. Make a the subject:

$$v = ut + \frac{1}{2}at^2$$

$v - ut = \frac{1}{2}at^2$

$2v - 2ut = at^2$

$a = \frac{2v - 2ut}{t^2}$

$a = \frac{2v - 2ut}{t^2}$

.....

(Total for Question 29 is 3 marks)

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30. Make m the subject:

$$E = mc^2$$

$m = \frac{E}{c^2}$

.....

(Total for Question 30 is 2 marks)
