JP Maths Revision

Attempt the paper before watching the solutions!

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

HIGHER TIER

Expanding Triple Brackets

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. Expand and simplify $(x + 1)(x + 2)(x + 3)$

$(x^2+2x+1x+2)(x+3)$

$(x^2+3x+2)(x+3)$

$x^3+3x^2+2x+3x^2+9x+6$

$x^3+6x^2+11x+6$

(Total for Question 1 is 3 marks)

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2. Expand and simplify $(2x - 1)(x + 2)(x - 5)$

$(2x^2+4x-x-2)(x-5)$

$(2x^2+3x-2)(x-5)$

$2x^3+3x^2-2x-10x^2-15x+10$

$2x^3-7x^2-17x+10$

(Total for Question 2 is 3 marks)

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3. Expand and simplify $(3x - 1)(2x + 1)(x - 4)$

$(6x^2+3x-2x-1)(x-4)$

$(6x^2+x-1)(x-4)$

$6x^3+x^2-x-24x^2-4x+4$

$6x^3-23x^2-5x+4$

(Total for Question 3 is 3 marks)

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1. Expand and simplify $(4x - 1)(x - 3)(2x - 5)$

$(4x^2-12x-1x+3)(2x-5)$

$(4x^2-13x+3)(2x-5)$

$8x^3-26x+6x-20x^2+65x-15$

$8x^3-20x^2+45x-15$

(Total for Question 1 is 3 marks)

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2. Expand and simplify $(x - 1)(x + 1)^2$

$(x-1)(x+1)(x+1)$

$(x^2-1)(x+1)$

x^3+x^2-x-1

(Total for Question 2 is 3 marks)

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3. Show that $(x - 2)^3$ can be written in the form $ax^3 + bx^2 + cx + d$ where a, b, c and d are integers.

$(x-2)(x-2)(x-2)$

$(x^2-2x-2x+4)(x-2)$

$(x^2-4x+4)(x-2)$

$x^3-2x^2-4x^2+8x+4x-8$

$x^3-6x^2+12x-8$

(Total for Question 3 is 3 marks)
