SKILLS CHECK

QUESTION 1

Find the value of p for which the equation $(p-3)x^2 + px + 3 = 0$ has a repeated root

QUESTION 2

Find the values of p for which the equation $px^2 + 2px + 3 = 0$ has no real roots

QUESTION 3

Find the equation of the line parallel to the line 2y + 4x = 7 passing through point (1,5). Give your answer in the form ax + by = c

QUESTION 4

Use the binomial expansion to write down the first four terms of $(1 + 2x)^7$

QUESTION 5

Find the gradient of the tangent to the curve $y = x^3 - 2x^2 + 2x - 1$ at the point (-1,-6)

SKILLS CHECK

QUESTION 1

Find the values of k for which the equation $8x^2 + (k+6)x + k = 0$ has a repeated root

QUESTION 2

Find the values of p for which the equation $x^2 + 2px + 1 = 0$ has no real roots

QUESTION 3

Find the equation of the line parallel to the line 6y + 3x = -4 passing through point (-3,4). Give your answer in the form ax + by = c

QUESTION 4

Use the binomial expansion to write down the first four terms of $(1 - 4x)^{10}$

QUESTION 5

Find the coordinates of the stationary points of the curve $y = 2x^3 - 24x$

SKILLS CHECK

QUESTION 1

Find the values of k for which the equation $9x^2 + kx + k - 5 = 0$ has a repeated root

QUESTION 2

Find the values of p for which the equation $3x^2 + px + 3 = 0$ has real and distinct roots

QUESTION 3

Find the equation of the line through point (2,-3) which is perpendicular to the line passing through points (2, -3) and (4,5). Give your answer in the form ax + by = c

QUESTION 4

Use the binomial expansion to write down the first three terms of $(2 - 3x)^{10}$

QUESTION 5

Find the gradient of the tangent to the curve
$y = \frac{1}{2}x^2 + \frac{1}{6}x^3 - \frac{1}{4}x$ at the point where x = $\frac{1}{2}$

WEEK 3

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SKILLS CHECK

QUESTION 1

Find the values of p for which the equation $(p-1)x^2 + px + 5x + 8 = 0$ has a repeated root

QUESTION 2

Find the values of p for which the equation $px^2 + 4x + 5 - p = 0$ has real and distinct roots

QUESTION 3

Find the equation of the line through point (6, 3) which is parallel to the line passing through points (-4, -1) and (-6, 9). Give your answer in the form ax + by = c

QUESTION 4

Find the coefficient of the 4th term in the expansion of $(4 + \frac{x}{2})^9$

QUESTION 5

Find the gradient of the tangent to the curve
$y = \frac{3}{2}x^2 + \frac{5}{6}x^3 - \frac{5}{4}x$ at the point where x = −1

SKILLS CHECK

QUESTION 1

Find the value of p for which the equation $(p-1)x^2 + px + 4x + 5 = 0$ has a repeated root

QUESTION 2

Find the values of p for which the equation $x^2 + 3(p+1)x + p + 1 = 0$ has no real roots

QUESTION 3

Find the equation of the line perpendicular to the line $2y - x = 5$ passing through point (-2,4). Give your answer in the form ax + by = c

QUESTION 4

Find the coefficient of the 5th term in the expansion of $(3 - \frac{x}{3})^{10}$

QUESTION 5

Find the x-coordinates of the stationary points of the curve
$y = 5x^3 - 2x^2 - 3x + 10$

WEEK 5

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SKILLS CHECK

QUESTION 1

Find the value of p for which the equation $(p-1)x^2 + px + 4x + 5 = 0$ has a repeated root

QUESTION 2

Find the values of p for which the equation $x^2 + 3(p+1)x + p + 1 = 0$ has no real roots

QUESTION 3

Find the equation of the line perpendicular to the line $2y - x = 5$ passing through point (-2,4). Give your answer in the form ax + by = c

QUESTION 4

Find the coefficient of the 5th term in the expansion of $(3 - \frac{x}{3})^{10}$

QUESTION 5

Find the x-coordinates of the stationary points of the curve
$y = 5x^3 - 2x^2 - 3x + 10$

WEEK 5

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SKILLS CHECK

Find the values of k for which the equation $(k - 3)x^2 + (k + 3)x + k + 3 = 0$ has a repeated root

Find the values of p for which the equation $2x^2 - (1 + p)x + 5 = p$ has real and distinct roots

Find the equation of the line perpendicular to the line 5y - 2x = 10 passing through point (-4,3). Give your answer in the form ax + by = c

Find the coefficient of the 5th term in the expansion of $(2 - \frac{3x}{2})^8$

Find the equation of the tangent to the curve $y = 5 - 10x + x^3$ at the point when x = -1

WEEK 6

SKILLS CHECK

QUESTION 1

Find the values of k for which the equation
$kx^2 + (k + 5)x + 2k + 1 = k + 1$ has a repeated root

QUESTION 2

Find the values of p for which the equation
$4x^2 + 8x - 4px + 8 - 7p = 0$ has no real roots

QUESTION 3

Find the equation of the line parallel to the line 4y + 3x = 5 passing through point (-4,4). Give your answer in the form ax + by = c

QUESTION 4

Find the coefficient of the 6th term in the expansion of $(\frac{1}{2} - 2x)^{12}$

QUESTION 5

Find the values of x for which the tangents to the curve
$y = 3x^3 + 6x^2 - 2x + 5$ are parallel to the graph y - 3x = 2