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

Show that $\frac{6\sqrt{3}-4}{2-\sqrt{3}}$ can be expressed in the from $a + b\sqrt{3}$

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

Simplify $\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}}$ by rationalising the denominator

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 value of x $2^x \times \frac{1}{4} \times 8 = 2^7$

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 value of x

$$27 \times \frac{1}{9} \times 3^{-x} = \frac{1}{81}$$

WEEK 4

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

Simplify $8^{\frac{1}{2}} - 2^{\frac{5}{2}} + 2^{\frac{7}{2}}$

WEEK 5

SKILLS CHECK

QUESTION 1

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

QUESTION 2

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

QUESTION 3

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

QUESTION 4

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

QUESTION 5

Show that $\frac{3\sqrt{3}-5}{\sqrt{3}-2}$ can be expressed in the from $a+b\sqrt{3}$

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

Simplify $3^{\frac{4}{3}} - 3^{\frac{1}{3}} + 3^{\frac{7}{3}}$

WEEK 7