SKILLS CHECK

QUESTION 1

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

QUESTION 2

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

QUESTION 3

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

QUESTION 4

Solve $1 - sin^2\theta = 2cos\theta$ for $0° < \theta < 720°$

QUESTION 5

Divide $2x^3 + 3x^2 - 2x - 3$ by $x + 1$

WEEK 1

SKILLS CHECK

QUESTION 1

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

QUESTION 2

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

QUESTION 3

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

QUESTION 4

Solve $cos^2\theta - sin^2\theta = -0.5$ for $0° < \theta < 360°$

QUESTION 5

Divide $3x^3 - 8x^2 + 3x + 2$ by $x - 2$

WEEK 2

SKILLS CHECK

QUESTION 1

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

QUESTION 2

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

QUESTION 3

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

QUESTION 4

Solve for $3tan\theta sin\theta = cos\theta$ for $0° < \theta < 360°$

QUESTION 5

Divide $8x^3 - 26x^2 + 3x + 9$ by $2x + 1$

WEEK 3

SKILLS CHECK

QUESTION 1

Find the value of x

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

QUESTION 2

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

QUESTION 3

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

QUESTION 4

Solve $2cos^2\theta - 3sin\theta = 0$ for $0° < \theta < 360°$

QUESTION 5

Divide $4x^3 - 4x^2 - 5x + 3$ by $2x - 1$

SKILLS CHECK

QUESTION 1

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

QUESTION 2

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

QUESTION 3

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

QUESTION 4

Solve $cos^2\theta + cos\theta = sin^2\theta$ for $0° < \theta < 360°$

QUESTION 5

Divide $x^3 + x - 2$ by $x - 1$

WEEK 5

SKILLS CHECK

QUESTION 1

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

QUESTION 2

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

QUESTION 3

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

QUESTION 4

Solve $6sin^2\theta + cos\theta = 4$ for $0° < \theta < 360°$

QUESTION 5

Divide $x^3 + 3x^2 - 3x - 9$ by $x + 3$

SKILLS CHECK

QUESTION 1

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

QUESTION 2

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

QUESTION 3

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

QUESTION 4

Solve $3cos^2\theta + 5sin\theta = 5$ for $0° < \theta < 360°$

QUESTION 5

Divide $4x^4 - 37x^2 + 9$ by $2x - 1$