A2 Maths with Test γ (gamma) version O

1) Find $\frac{dy}{dx}$ if y = $\frac{x}{\sin x}$

2) Use algebraic division to express $\frac{x^4+3x^2-4}{x^2+1}$ as an improper fractions in the form $ax^2+bx+c+\frac{R}{\text{divisor}}$

3) Sketch $y = -(x-a)^3$ (a is an arbitrary positive constant):

4) Integrate $\sin(\pi - x)$ with respect to x using appropriate notation:

5) Integrate $\int 3\sec^2 3x\ dx$

6) The tangent to the curve with equation $y = \tan 2x$ at the point $x = \frac{\pi}{8}$ meets the y axis at the point Y. Find the exact distance OY (where O is the origin).

A2 Maths with Test γ (gamma) version P

1) Find $\frac{dy}{dx}$ if y = $\frac{x}{\cos x}$

2) Use algebraic division to express $\frac{x^4+4x^2-4}{x^2+1}$ as an improper fractions in the form $ax^2+bx+c+\frac{R}{\text{divisor}}$

3) Sketch $y = (x+a)^3$ (a is an arbitrary positive constant):

4) Integrate $\cos(\pi - x)$ with respect to x using appropriate notation:

5) Integrate $\int 2\sec^2 3x\ dx$

6) The tangent to the curve with equation $y = \tan 4x$ at the point $x = \frac{\pi}{16}$ meets the y axis at the point Y. Find the exact distance OY (where O is the origin).

A2 Maths with Test γ (gamma) version Q

1) Find $\frac{dy}{dx}$ if y = $\frac{2x}{\sin x}$

2) Use algebraic division to express $\frac{x^4+3x-4}{x^2+1}$ as an improper fractions in the form

$$ax^2 + bx + c + \frac{R}{\text{divisor}}$$

3) Sketch $y = -(x+a)^3$ (a is an arbitrary positive constant):

4) Integrate $\sin(2\pi - 3x)$ with respect to x using appropriate notation:

5) Integrate $\int 3\sec^2 2x\, dx$

6) The tangent to the curve with equation $y = \tan 6x$ at the point $x = \frac{\pi}{24}$ meets the y axis at the point Y. Find the exact distance OY (where O is the origin).

A2 Maths with Test γ (gamma) version R

1) Find $\frac{dy}{dx}$ if y = $\frac{2x}{\cos x}$

2) Use algebraic division to express $\frac{x^4+ax^2-4}{x^2+1}$ as an improper fractions in the form

$$ax^2 + bx + c + \frac{R}{\text{divisor}}$$

3) Sketch $y = -(x+a)^4$ (a is an arbitrary constant):

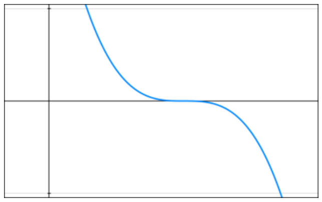
4) Integrate $\sin(a\pi - bx)$ with respect to x using appropriate notation:

5) Integrate $\int a\sec^2 bx\, dx$

6) The tangent to the curve with equation $y = \tan ax$ at the point $x = \frac{\pi}{4a}$ meets the y axis at the point Y. Find the exact distance OY (where O is the origin).

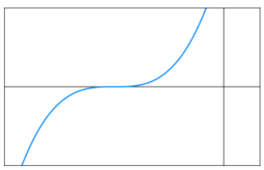
O Answers

1) $\frac{dy}{dx} = \frac{\sin x - x\cos x}{\sin^2 x}$
2) $x^2 + 2 - \frac{6}{x^2+1}$
3) Graph
4) $\cos(\pi - x) + c$
5) tan 3x + c
6) $\frac{\pi}{2} - 1.$



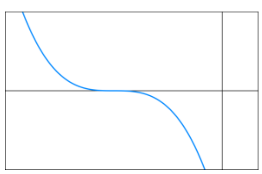
P Answers

1) $\frac{dy}{dx} = \frac{cosx+xsinx}{\cos^2 x}$
2)
3) $x^2 + 3 - \frac{7}{x^2+1}$
4) Graph
5) $-\sin(\pi - x) + c$
6) $\frac{2}{3}$tan 3x + c
7) $\frac{\pi}{2} - 1$



Q Answers

1) $\frac{dy}{dx} = \frac{2(sinx-xcosx)}{\sin^2 x}$
2) $x^2 - 1 + \frac{3x-3}{x^2+1}$
3) Graph
4) $\frac{1}{3}\cos(2\pi - 3x) + c$
5) $\frac{3}{2}$tan 2x + c
6) $\frac{\pi}{2} - 1$



R Answers

1) $\frac{dy}{dx} = \frac{2(cosx+xsinx)}{\cos^2 x}$
2) $x^2 + (a-1) - \frac{3+a}{x^2+1}$
3) Graph
4) $\frac{1}{b}\cos(a\pi - bx) + c$
5) $\frac{a}{b}$tan bx + c
6) $\frac{\pi}{2} - 1$