53.1

Mathematical Treasure Hunt

What is the remainder when

$$27x^3 - 9x + 2$$

is divided by 3x+1?

4

Mathematical Treasure Hunt

Express

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

as a product of 3 linear factors

(x-1)(2x+3)(x-2)

Mathematical Treasure Hunt

$x = 3t - 1$

$y = t^2$

define a curve

Find $\frac{dy}{dx}$ in terms of t

$\frac{2t}{3}$

Mathematical Treasure Hunt

$$x^3y - 3y^2 = 4$$

Find $\frac{dy}{dx}$

$\frac{3x^2y}{6y-x^3}$

Mathematical Treasure Hunt

$x = 3t - 1$

$y = t^2$

define a graph

Find the Cartesian equation

$\frac{(x+1)^2}{9}$

Mathematical Treasure Hunt

What is the remainder when

$6x^3 - 35x^2 + 34x + 40$

is divided by 2x-5?

0

Mathematical Treasure Hunt

Express

$6x^3 - 35x^2 + 34x + 40$

as a product of 3 linear factors

(2x-5)(3x+2)(x-4)

Mathematical Treasure Hunt

$x = \frac{1}{t}$

$y = 3t + 7$

define a curve

Find $\frac{dy}{dx}$ in terms of t

$-3t^2$

Mathematical Treasure Hunt

$x = \frac{1}{t}$

y = 3t +7

define a curve

Find the Cartesian equation

xy=3+7x

Mathematical Treasure Hunt

$2xy + 3e^y = 7x$

Find $\frac{dy}{dx}$

$\frac{7-2y}{2x+3e^y}$

Mathematical Treasure Hunt

A(4, 7, -2)

B(3, -5, 1)

C(-1, 0, 3)

Find $\overrightarrow{BA}.\overrightarrow{BC}$

50

Mathematical Treasure Hunt

A(4, 7, -2)

B(3, -5, 1)

C(-1, 0, 3)

Find angle ABC