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MTH102

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1. Obtain the  $\lim_{x \rightarrow 2} \frac{x^2 - x - 2}{x^2 - 2x}$

$$\backslash(0\backslash)$$

1

--->>  $\backslash(\frac{3}{2}\backslash)$

Undefined

2. What is the inverse of the function  $y = x^2$

--->>  $\backslash(x=y^{1/2}\backslash)$

$$\backslash(x=y^2\backslash)$$

$$\backslash(x=2y\backslash)$$

$$\backslash(x=\frac{1}{2}y^2\backslash)$$

3. If  $x^x$ , find  $\frac{dy}{dx}$

$$\backslash(\ln x\backslash)$$

$$\backslash(1+\ln x\backslash)$$

$$\backslash(x(1+\ln x)\backslash)$$

--->>  $\backslash(x^x(1+\ln x)\backslash)$

4. If  $p(x)$  is a polynomial function and  $c$  is any real number, then

$$\backslash(\lim_{x \rightarrow c} p(x)=p(c)\backslash)$$

$$\backslash(\lim_{x \rightarrow c} p(x)=0\backslash)$$

$$\backslash(\lim_{x \rightarrow c} p(x)=\infty\backslash)$$

--->>  $\backslash(\lim_{x \rightarrow c} p(x)=p(c)\backslash)$

5. Evaluate the derivative of  $y(x) = x^2$  at the point  $x$

$$\backslash(2x^2\backslash)$$

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$\backslash(x^2)$

2

6. If the value of the function  $\backslash(y(x))$  get arbitrary close to  $\backslash(b)$  as  $\backslash(x)$  approaches the point  $\backslash(a)$ , the statement can be mathematically written as

$\backslash(\lim_{x \rightarrow b} y(x) = a)$

$\backslash(\lim y(x) = b-a)$

--->>  $\backslash(\lim_{x \rightarrow a} y(x) = b)$

$\backslash(\lim y(x) = a-b)$

7. Determine the equation that defines  $\backslash(y)$  as a function of  $\backslash(x)$ .

$\backslash(y^2 - 2y = -1)$

--->>  $\backslash(x - y = 2)$

$\backslash(2y^2 + x = 1)$

$\backslash(y^2 + 2x^2 = 3)$

8. Obtain the range of  $\backslash(f(x) = \sqrt{9-x^2})$  for which  $\backslash(f(x))$  is a real function

--->>  $\backslash(0 \leq x \leq 3)$

$\backslash(x \geq 3)$

$\backslash(-3 < x < 3)$

$\backslash(-3 \leq x \leq 3)$

9. Determine the differentiation of 120

--->>  $\backslash(0)$

120

$\backslash(x)$

$\backslash(120x)$

10. Differentiate with respect to  $\backslash(t)$  the function  $\backslash(f(t) = 3\cos 2t)$

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\(6\cos 2t\)

\(2\sin 3t\)

---> \(-6\sin 2t\)

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