

1) yes it is a prime number

2)  $(2-x)^5$

$$(2-x)^{3+2}$$

$$(2-x)^3 \times (2-x)^2$$

$$(8-12x+6x^2-x^3) \times (4-4x+x^2)$$

3)  $\frac{x^2 - x^2}{x^3 \sqrt{x^2+1}} = 0$

$$\frac{\cancel{x} \times (1-x)}{\cancel{x^3} \sqrt{x^2+1}} = 0$$

$$x^2 \frac{1-x}{\sqrt{x^2+1}} = 0$$

$$1-x=0$$

$$-x = -1$$

$$-1 = x //$$



$$4) \frac{x - x^2}{x^3 \sqrt{x^2 + 1}} = 0$$

$$1 - x = 0$$

$$-x = -1$$

$$1 = x //$$

$$\frac{\cancel{x} \times (1 - x)}{\cancel{x}^3 \sqrt{x^2 + 1}} = 0$$

$$\frac{1 - x}{\sqrt{x^2 + 1}} = 0$$

$$5) \frac{x^3 - 9x^2 + 26x - 24}{x^2 - 9} > 0$$

$$\frac{x^3 - 9x^2 + 26x - 24}{x^2 - 9} = 0, x \neq -3, x \neq 3$$

$$\frac{x^3 - 2x^2 - 7x^2 + 26x - 24}{x^2 - 3^2} = 0$$

$$\frac{x^3 - 2x^2 - 7x^2 + 14x + 12x - 24}{(x-3) \times (x+3)} = 0$$

$$\frac{(x-2) \times (x^2 - 3x - 4x + 12)}{(x-3) \times (x+3)} = 0$$



$$\frac{(x-2) \times (x \times (x-3) - 4(x-3))}{(x-3) \times (x+3)} = 0$$

$$\frac{(x-2) \times (x-4)}{(x+3)} = 0$$

$$(x-2) \times (x-4) = 0 //$$

6 >



$$7) \frac{a^5 - b^5}{a - b}$$

$$8) \begin{array}{r} 11 \overline{) 2717} \\ 13 \overline{) 247} \\ 19 \end{array} \quad \begin{array}{r} 5 \overline{) 1015} \\ 7 \overline{) 203} \\ 29 \end{array}$$

$$11 \times 13 \times 5 \times 7 = 5005 //$$

$$9) \frac{\cancel{x^4} - 3x^3 + x - 1}{\cancel{x^3} - \cancel{x^2} - 1}$$

$$3x^3 + x //$$

$$10) x^4 - 4, \quad x^4 - 5x^2 + 6$$



11)

$$-x^2 - x + 2 \geq 0$$

12)

13)



14) i)  $f(x) = 2x^2 - 2x$   
 $f(2) = 2(2)^2 - 2(2)$   
 $= 4$

ii)  $f(x) = 2x^2 - 2x$   
 $f(-1) = 2(-1)^2 - 2(-1)$   
 $= 4 //$

15)  $\frac{\sqrt{5} + 1}{\sqrt{5} - 2}$