

الكسب الجزئية

a) $5x+8$ $(x-2)$

$$4x^3 - 12x^2 + 9x - 2 \quad 4(2)^3 - 12(2)^2 + 9(2) - 2 = 0$$

	$4x^2$	$-4x$	1		
x	$4x^3$	$-4x^2$	x	0	
-2	$-8x^2$	$8x$	-2		

$4x^2 - 4x + 1$
 $(2x-1)^2$

$$5x+8 = 2 \frac{\boxed{A}}{x-2} + \frac{\boxed{B}}{2x-1} + \frac{\boxed{C}}{(2x-1)^2}$$

$$5x+8 = A(2x-1)^2 + B(2x-1)(x-2) + C(x-2)$$

$x=2$ $5(2)+8 = A(2(2)-1)^2 + B(2(2)-1)(2-2) + C(2-2)$
 $\frac{18}{9} = \frac{9}{9} A \quad A=2$

$x=\frac{1}{2}$ $5(\frac{1}{2})+8 = A(2(\frac{1}{2})-1)^2 + B(2(\frac{1}{2})-1)(\frac{1}{2}-2) + C(\frac{1}{2}-2)$
 $-\frac{2}{3} = -\frac{3}{2} C \quad C=-\frac{4}{3}$

$x=0$ $5(0)+8 = 2(2(0)-1)^2 + B(2(0)-1)(0-2) - \frac{4}{3}(0-2)$
 $8 = 2 + 2B + \frac{8}{3}$
 $8 = 2B + \frac{16}{3} \quad -\frac{8}{3} = 2B \quad B=-\frac{4}{3}$

zoom

الكسر الجبرية

$$b) \frac{3x^2 - 2x - 5}{x^3 - x^2}$$

$$x^2(x-1)$$

$$\frac{3x^2 - 2x - 5}{x^3 - x^2} = \frac{A}{x} + \frac{B}{x^2} + \frac{C}{x-1}$$

$$3x^2 - 2x - 5 = Ax(x-1) + B(x-1) + Cx^2$$

$$\boxed{X=0} \quad 3(0)^2 - 2(0) - 5 = A(0)(0-1) + B(0-1) + C(0)^2$$
$$\frac{-5}{-1} = \frac{-B}{-1} \quad \boxed{B=5}$$

$$\boxed{X=1} \quad 3(1)^2 - 2(1) - 5 = A(1)(1-1) + B(1-1) + C(1)^2$$
$$\boxed{-4 = C}$$

$$\boxed{X=2} \quad 3(2)^2 - 2(2) - 5 = A(2)(2-1) + B(1) + C(2)^2$$
$$\frac{3}{+1} = \frac{2A}{+1} + \frac{5}{+1} + \frac{-4}{+1} \quad \boxed{A=7}$$

$$\frac{3x^2 - 2x - 5}{x^3 - x^2} = \frac{7}{x} + \frac{5}{x^2} + \frac{-4}{x-1}$$

Zoom

$$\frac{2-3x-4x^2}{x(x-1)(1-2x)} \rightarrow \frac{4x^2+3x-2}{x(x-1)(2x-1)}$$

$$\frac{4x^2+3x-2}{x(x-1)(2x-1)} = \frac{A}{x} + \frac{B}{x-1} + \frac{C}{2x-1}$$

$$4x^2+3x-2 = A(x-1)(2x-1) + B(x)(2x-1) + C(x)(x-1)$$

$$\boxed{x=0} \quad 4(0)^2+3(0)-2 = A(0-1)(2(0)-1) + \cancel{B(0)(2(0)-1)} + \cancel{C(0)(0-1)}$$

$$-2 = \underline{A(-1)(-1)} \quad \boxed{A = -2}$$

$$\boxed{x=1} \quad 4(1)^2+3(1)-2 = \cancel{A(1-1)(2(1)-1)} + B(1)(2(1)-1) + \cancel{C(1)(1-1)}$$

$$\boxed{5 = B}$$

$$\boxed{x=\frac{1}{2}} \quad 4\left(\frac{1}{2}\right)^2+3\left(\frac{1}{2}\right)-2 = A\left(\frac{1}{2}-1\right)(2\left(\frac{1}{2}\right)-1) + B\left(\frac{1}{2}\right)(2\left(\frac{1}{2}\right)-1) + C\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)$$

$$4\left(\frac{1}{4}\right) + \frac{3}{2} - 2 = C\left(\frac{1}{2}\right)\left(\frac{1}{2}-1\right)$$

$$\frac{3}{2} - \frac{1x^2}{2} = C\left(\frac{1}{2}\right)\left(-\frac{1}{2}\right)$$

$$2 - \frac{4}{1} \times \frac{1}{2} = \frac{1}{4} C \times \frac{4}{1} \quad \boxed{C = -2}$$

$$\frac{2-3x-4x^2}{x(x-1)(1-2x)} = \frac{-2}{x} + \frac{5}{x-1} - \frac{2}{2x-1}$$

$$-\frac{(x-3)^2}{x^3-16x} \rightarrow \frac{(x-3)^2}{x(x^2-16)} \rightarrow \frac{(x-3)^2}{x(x-4)(x+4)}$$

$$= \frac{A}{x} + \frac{B}{x-4} + \frac{C}{x+4}$$

$$(x-3)^2 = A(x-4)(x+4) + B(x)(x+4) + C(x)(x-4)$$

$$x = -4$$

$$\frac{49}{32} = \frac{32C}{32}$$

$$C = \frac{49}{32}$$

$$x = 4$$

$$\frac{1}{32} = \frac{32B}{32}$$

$$B = \frac{1}{32}$$

$$x = 0$$

$$\frac{9}{-16} = \frac{-16A}{-16}$$

$$A = \frac{-9}{16}$$

$$\frac{(x-3)^2}{x^3-16x} = \frac{-9}{16x} + \frac{1}{32(x-4)} + \frac{49}{32(x+4)}$$