* $f(x) = x^2 - 7x + 10$ ← standard

$f(x) = (x-2)(x-5)$ ← factored

$2, \quad 5$ ← roots

$(2,0) \quad (5,0)$ ←

$f(2) = 0$ → 2 Solution

→ $(x-2)$ factor.

$f(-5) = 0$ → -5 Solution

→ $(x+5)$ factor

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which of the following is factor?

1) $x-2$ ✓
2) $x+2$
3) $x+4$
4) $x-4$

x	f(x)
1	3
2	0
3	7
0	-4

$P(x) = x^2 + ax + 7$

If $(x-2)$ is factor

find a?

$P(2) = 0$

$2^2 + a(2) + 7 = 0$

$4 + 2a + 7 = 0$

$2a = -11$

$a = -11/2$

$P(x) = x^2 - 4x - c$

If $(x+3)$ factor find c?

$P(-3) = 0$

$(-3)^2 - 4(-3) - c = 0$

$9 + 12 - c = 0$

$21 = c$

$P(x) = 4(x^2 - 7x + c) - 3(x + 7)$

If x is factor find c?

$P(0) = 0$

$4c - 21 = 0$

$4c = 21$

$c = 21/4$

Reminder theorem

$$\frac{\text{Dividened}}{\text{Divisor}} = \text{Quetiant} + \frac{\text{Reminder}}{\text{Divisor}}$$

Dividened = Quetiant (Divisor) + Remainder.

$$\frac{5}{2} = 2\ \frac{1}{2}$$

Ex:

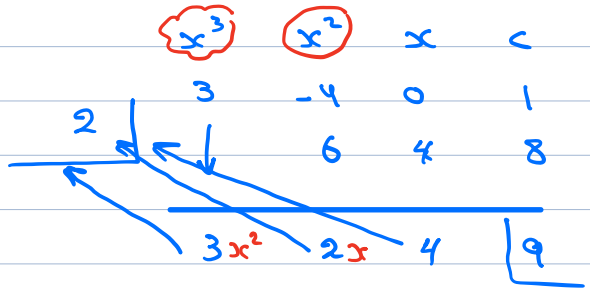
$$\frac{5x^2 + 7x - 4}{x+1} = ax + b + \frac{R}{x+1}$$

x^2	x	c	
5	7	-4	$x+1=0$, $x=-1$
	-5	-2	
5 (a)	2 (b)	$-6 \rightarrow R$	$x + x$

Reminder.

$$5x + 2 - \frac{6}{x+1}$$

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



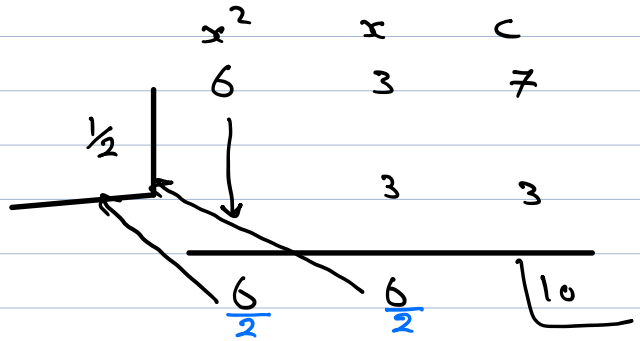
$$3x^2 + 2x + 4 + \frac{9}{x-2}$$

$$\frac{6x^2 + 3x + 7}{2x - 1}$$

$2x - 1 = 0$

$2x = 1$

$x = \frac{1}{2}$



$$3x + 3 + \frac{10}{2x - 1}$$

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what is the reminder when $x^2 - 7x + 3$ is divided by $(x+2)$?

	1	-7	3
-2		-2	18
	1	-9	21 ←

A.M

$(-2)^2 - 7(2) + 3$

$4 + 14 + 3 = 21$