3. If the quotient on dividing $3x^3 - 2x^2 + 7x - 5$ by x + 3 is $3x^2 - 11x + a$, find *a*. Solution:

-3	3	-2	7	-5
	0	- 9	33	-120
	3	-11	40	- 125

The quotient is $3x^2 - 11x + 40$ Given $3x^2 - 11x + a$ $\therefore a = 40$

4. Show that 3z + 10 is a factor of $9z^3 - 27z^2 - 100z + 300$. Finfl ko the other factors. Solution: -10/3 = 9 -370 - 100 300 -300

Since the remainder is zero (3z + 10) is a factor.

Quotient is
$$\frac{1}{3}$$
 (9z² - 57z + 90)
= 3z² - 19z + 30
= 3z² - 10z - 9z + 30
= z (3z - 10) - 3 (3z - 10)
= (3z - 10) (z - 3)

: The other factors are (3z - 10) and (z - 3)