

3) Factor the following:

a)  $-3x^2 + 33x - 54$

$-3(x^2 - 11x + 18)$

$-3(x-9)(x-2)$

$(-9)(-2) = 18$

$(-9) + (-2) = -11$

c)  $-16x^2 + 25$

$-(16x^2 - 25)$

$-((4x)^2 - 5^2)$

$-(4x-5)(4x+5)$

OR:  $25 - 16x^2$   
 $5^2 - (4x)^2$

$(5+4x)(5-4x)$

d)  $x^2 + 15x + 36$

$(x+3)(x+12)$

e)  $11x^2 + 35x + 6$

$x^2 + 35x + 66$

$(x+33)(x+2)$

$(x+3)(11x+2)$

Divide through by 11.

f)  $x^2 + 10x + 16$

$(x+8)(x+2)$

g)  $12x^2 - 28x - 5$

$x^2 - 28x - 60$

$(x-30)(x+2)$

$(x - \frac{30}{12})(x + \frac{2}{12})$

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

$(2x-5)(6x+1)$

h)  $2m^2 + 30m + 108$

$2(m^2 + 15m + 54)$

$2(m+9)(m+6)$

i)  $x^2 - 36$

$x^2 - 6^2$

$(x+6)(x-6)$

j)  $-x^2 - 6x + 27$

$-(x^2 + 6x - 27)$

$-(x+9)(x-3)$