

Calculus 1-1

1. a) $x^2 - x - 2$
 $(x-2)(x+1)$

b) $x^2 - 9x + 14$
 $(x-7)(x-2)$

c) $x^2 + 7x + 12$
 $(x+3)(x+4)$

d) $2x^2 - x - 1$ $m = -2$
 $2x^2 - 2x + 1x - 1$ $a = -1$
 $2x(x-1) + 1(x-1)$ $-2, 1$
 $(x-1)(2x+1)$

e) $5x^2 + 13x + 6$ $m = 30$
 $5x^2 + 10x + 3x + 6$ $a = 13$
 $5x(x+2) + 3(x+2)$ $10, 3$
 $(x+2)(5x+3)$

f) $6y^2 - 11y + 3$ $m = 18$
 $6y^2 - 9y - 2y + 3$ $a = -11$
 $3y(2y-3) - 1(2y-3)$ $-9, -2$
 $(2y-3)(3y-1)$

g) $t^3 + 2t^2 - 3t$
 $t(t^2 + 2t - 3)$
 $t(t+3)(t-1)$

h) $3x^4 + 7x^3 + 2x^2$
 $x^2(3x^2 + 7x + 2)$ $m = 6$
 $x^2[3x^2 + 6x + x + 2]$ $a = 7$
 $x^2[3x(x+2) + 1(x+2)]$ $6, 1$
 $x^2(x+2)(3x+1)$

i) $4x^2 - 25$
 $(2x-5)(2x+5)$

j) $y^3 - 9y$
 $y(y^2 - 9)$
 $y(y-3)(y+3)$

k) $x^4 - 16$
 $(x^2 - 4)(x^2 + 4)$
 $(x-2)(x+2)(x^2 + 4)$

l) $r^8 - 1$
 $(r^4 - 1)(r^4 + 1)$
 $(r^2 - 1)(r^2 + 1)(r^4 + 1)$
 $(r-1)(r+1)(r^2 + 1)(r^4 + 1)$