Solving equations by factorising p.12

4 a) $x^2 + 4x + 3 = 0$
$(x+3)(x+1) = 0$
$x = -3, \; x = -1$

b) $y^2 + 6y + 5 = 0$
$(y+5)(y+1) = 0$
$y = -5, \; y = -1$

c) $a^2 + 8a + 7 = 0$
$(a+7)(a+1) = 0$
$a = -7, \; a = -1$

d) $m^2 + 5m + 6 = 0$
$(m+2)(m+3) = 0$
$m = -1, \; m = -3$

e) $c^2 + 6c + 8 = 0$
$(c+4)(c+2) = 0$
$c = -4, \; c = -2$

f) $z^2 + 7z + 12 = 0$
$(z+4)(z+3) = 0$
$z = -4, \; z = -3$

g) $15 - 2x - x^2 = 0$
$(5+x)(3-x) = 0$
$x = 3, \; x = -5$

h) $b^2 - 8b + 16 = 0$
$(b-4)^2 = 0$
$b = 4$

i) $x^2 - 7x + 10 = 0$
$(x-5)(x-2) = 0$
$x = 5, \; x = 2$

j) $w^2 - 12w + 27 = 0$
$(w-9)(w-3) = 0$
$w = 9 \quad w = 3$

k) $18 + 7y - y^2 = 0$
$(9-y)(2+y) = 0$
$y = 9, \; y = -2$

l) $k^2 - 10k + 24 = 0$
$(k-6)(k-4) = 0$
$k = 6, \; k = 4$

m) $8 - 2x - x^2 = 0$
$(4+x)(2-x) = 0$
$x = -4, \; x = 2$

n) $6 + m - m^2 = 0$
$(3-m)(2+m) = 0$
$m = 3, \; m = -2$

o) $t^2 - 7t - 30 = 0$
$(t-10)(t+3) = 0$
$t = 10, \; t = -3$

p) $a^2 + 5a - 14 = 0$
$(a+7)(a-2) = 0$
$a = -7, \; a = 2$

q) $c^2 - 2c - 15 = 0$
$(c-5)(c+3) = 0$
$c = 5, \; c = -3$

r) $12 - 4p - p^2 = 0$
$(6+p)(2-p) = 0$
$p = -6, \; p = 2$

Quad 1 Answers

5a) $2x^2 + 7x + 5 = 0$
$(2x + 5)(x + 1) = 0$
$x = -\frac{5}{2}$, $x = -1$

b) $2p^2 + 11p + 5 = 0$
$(2p + 1)(p + 5) = 0$
$p = -\frac{1}{2}$, $p = -5$

c) $3t^2 + 10t + 3 = 0$
$(3t + 1)(t + 3) = 0$
$t = -\frac{1}{3}$, $t = -3$

d) $3k^2 + 7k + 2 = 0$
$(3k + 1)(k + 2) = 0$
$k = -\frac{1}{3}$, $k = -2$

e) $3y^2 + 8y + 5 = 0$
$(3y + 5)(y + 1) = 0$
$y = -\frac{5}{3}$, $y = -1$

f) $6 - 7a - 5a^2 = 0$
$(2 + a)(3 - 5a) = 0$
$a = -2$, $a = \frac{3}{5}$

g) $3 - 5w - 2w^2 = 0$
$(3 + w)(1 - 2w) = 0$
$w = -3$, $w = \frac{1}{2}$

h) $3d^2 - 5d + 2 = 0$
$(3d - 2)(d - 1) = 0$
$d = \frac{2}{3}$, $d = 1$

i) $5x^2 - 16x + 3 = 0$
$(5x - 1)(x - 3) = 0$
$x = \frac{1}{5}$, $x = 3$

j) $3m^2 - 14m + 8 = 0$
$(3m - 2)(m - 4) = 0$
$m = \frac{2}{3}$, $m = 4$

k) $7 + 5c - 2c^2 = 0$
$(1 + c)(7 - 2c) = 0$
$c = -1$, $c = \frac{7}{2}$

l) $1 - 5y - 6y^2 = 0$
$(1 + y)(1 - 6y) = 0$
$y = -1$, $y = \frac{1}{6}$

m) $3x^2 - 2x = 1$
$3x^2 - 2x - 1 = 0$
$(3x + 1)(x - 1) = 0$
$x = -\frac{1}{3}$, $x = 1$

n) $4q^2 + 5q = 6$
$4q^2 + 5q - 6 = 0$
$(4q - 3)(q + 2) = 0$
$q = \frac{3}{4}$, $q = -2$

o) $4t(t - 1) - 3 = 0$
$4t^2 - 4t - 3 = 0$
$(2t + 1)(2t - 3) = 0$
$t = -\frac{1}{2}$, $t = \frac{3}{2}$

p) $3m^2 + 2m = 5$
$3m^2 + 2m - 5 = 0$
$(3m + 5)(m - 1) = 0$
$m = -\frac{5}{3}$, $m = 1$

q) $36v^2 = -v + 2$
$36v^2 + v - 2 = 0$
$(4v + 1)(9v - 2) = 0$
$v = -\frac{1}{4}$, $v = \frac{2}{9}$

r) $7s^2 = 4 + 27s$
$7s^2 - 27s - 4 = 0$
$(7s + 1)(s - 4) = 0$
$s = -\frac{1}{7}$, $s = 4$