

1.

[2 points]

Make y the subject of the following formulae:

(a) $x = \frac{\sqrt{y-3}}{2}$

(b) $x = \frac{y-2}{y+3}$

2.

[2 points]

Expand and simplify

(a) $(2 + \sqrt{3})^2$

(b) $(p + 2q)(3p - q)$

3.

[8 points]

Factorize the following expressions:

(a) $100x^2 - 3$

(b) $x^2 + 2x - 15$

(c) $x^2 + 4x + 4$

(d) $x^3 - 3x^2 - 4x + 12$

(e) $3x^2 + 10x - 8$

(f) $x^2 - 20x + 98$

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

(h) $x^4 - 37x^2 + 36$