



Maths
Junior Certificate
Higher Level

Past Exam Questions on
Evaluating in Algebra

Q4 2010 Paper 1

4. (a) ✎ Solve $3(x-2) - 5(x-3) = 1$.

Q5 2009 Paper 1

5. (a) ✎ Given that $f(x) = 5x - 12$ and that $f(a) = a$, find the value of a .

Q3 2009 Paper 1

(b) (i) ✎ Given that $x = 2t - 1$ and $y = \frac{2}{3}t + 2$, express $3x - y + 2$ in terms of t , in its simplest form.

(ii) ✎ Hence, find the value of t when $3x - y + 2 = 0$.

Q4 2009 Paper 1

4. (a) ✎ Given that $y = \sqrt{2x - a}$,
find the value of y when $x = 4$ and $a = -1$.

Q4 2008 Paper 1

4. (a) ✎ Given that $f(x) = kx + 8$ and that $f(9) = 44$, find the value of k .

Q5 2008 Paper 1

5. (a) ✎ ✎ Given that $3d = b(c + a)$, write c in terms of a , b and d .

Q3 2007 Paper 1

3. (a) ✎ ✎ Solve $\frac{3-2m}{5} = 3$, where $m \in \mathbb{Z}$.

Q6 2007 Paper 1

- (b) (i) ✎ ✎ Given that $x = 2a + 1$ and $y = 2ax - 4a^2$, express y in terms of a .
- (ii) ✎ ✎ Hence, or otherwise, find the value of x for which $y = 4$.

Q3 Part (b) 2007 Paper 1

- (ii) ✎ ✎ Solve $3x^2 + 9x + 10 = (2x + 2)^2 - 1$ and give your answers correct to one decimal place.

Q3 2007 Paper 1

(c) (i) ✎ Solve the equation $3a^2 + 5a = 2$.

(ii) ✎ Hence, or otherwise, find the two values of $t \in \mathbb{R}$ for which

$$3\left(\frac{1}{t}\right)^2 + 5\left(\frac{1}{t}\right) = 2.$$

(iii) ✎ Verify your values for t from part (ii), above.

Q6 2007 Paper 1

6. (a) ✎ Given that $f: x \rightarrow 3x + 1$ and $g: x \rightarrow 1 + x^2$,
solve for x : $f(x) = g(x)$, $x \in \mathbb{N}$.

Q4 2006 Paper 1

4. (a) ✎ Express in its simplest form:

$$2x - [3 - (4 - 3x)] + 6.$$

Q6 2006 Paper 1

6. (a) Given that:

$$v^2 = u^2 + 2au.$$

✎ Write s in terms of v , u and a .

Q1 Part (c) 2005 Paper 1

(ii) ✎ Simplify $\sqrt{3}(2\sqrt{6} - 4\sqrt{3}) - \sqrt{10}(3\sqrt{5} - 2\sqrt{10})$,

without the use of a calculator.

Express your answer in the form $a + b\sqrt{2}$, where $a, b \in \mathbb{Z}$.