



Instructor: Dr. R.A.G. Seely
(Jan 2017)

Test 1
(version for practice)

Algebra & Functions (Maths 201–016)

(Marks)

Show your work—**justify** all your answers. Just having the correct answer is not sufficient.

Pace yourself—a rough guide is to spend not more than 2m or 3m minutes on a question worth m marks.

(8 × 2) 1. Evaluate the following expressions:

(a) 110% of 30

(b) $3 - 4 \times 5 + 3$

(c) $\frac{6 - (2 + 1)}{3(8 - 6)}$

(d) $19 - (7 + |3 - 3^2 \cdot 2|)$

(e) $\frac{5}{8} \div \frac{3}{10}$

(f) $\frac{5}{7} - \frac{2}{21}$

(g) $\left(\frac{1}{3} \times 27\right) \left(\frac{1}{3} \times 18\right)$

(h) $\frac{9}{2} \div \left(\frac{5}{6} + \frac{11}{3}\right) \times \frac{8}{3}$

(5 × 3) 2. Expand and simplify the following algebraic expressions:

(a) $(A - B)(A + B)$

(b) $(A + B)^2$

(c) $2 - (1 - x)^2$

(d) $5(x + 3)(4x - 3) - 5x(x + 3)$

(e) $(2 - 5x)^2 - (2x - 5) - x(x + 1)$

3. For each of the following equations, show the appropriate arithmetic and algebraic steps isolating the variable x on the left side of the equation (and so solve the equation).

(3 × 3)

(a) $-x + 11x - 11 = 5x + 13$

(b) $\frac{144x}{25} = \frac{12}{75}$

(c) $3x^2 - 12x + 9 = 3(x - 2)(x + 2)$

(Total: 40)

End of Practice Test

Some alternate questions (from an alternate practice test):

1. Question 1

(a) 20% of 75

(b) $(3 - 4 \times 5 + 3)^0$

2. Question 2

(a) $(5x - 2y)^2 - (5x + 1)(5x - 1)$

3. Question 3

(a) $\frac{22}{12}x - \frac{4}{3} = 2\left(\frac{5}{4}x - \frac{7}{3}\right)$