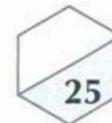


**Class Test 3** »



Answer all questions. Show your working clearly.

1. Solve the following equation.

$$2a = \sqrt{\frac{1-a}{2}} - 3 \quad [3]$$

2. Simplify the following fractions.

(a)  $\frac{25x^2y(1+x)(1-x)}{(3y+4)(1-2y)} \times \left[ \frac{4-4x}{27y^2-48} \div \frac{10x(1-x)^2}{(3y+4)^2} \right] \quad [2]$

(b)  $18ab^3 \times \frac{\sqrt{16a^2}}{3(2ab^3)^2} \quad [1]$

3. Given the formula  $d = \frac{a-b}{2c} - \frac{3ac}{b}$ ,

(a) find  $d$  if  $a = 1$ ,  $b = 7$  and  $c = -7$ , [1]

(b) make  $a$  the subject of the formula, [1]

(c) find  $a$  if  $b = 6$ ,  $c = -3$  and  $d = \frac{1}{2}$ . [1]

4. Given that  $\frac{2}{a} = \frac{p+q}{3p}$  and  $\frac{3}{b} = \frac{p+q}{pq}$ , find  $\frac{a^2+2b}{2a}$  in terms of  $p$  and  $q$ . [3]

## Chapter 6 • Algebraic Fractions and Formulae

5. The price of a book was \$ $p$ . The number of books bought was given by  $x = \frac{108}{p} + \frac{45}{2p} + 3$ .
- When the price was \$4.50, find the number of books bought. [1]
  - Find an expression for  $p$  in terms of  $x$ . [1]
  - Given that 13 books were bought, find the price of 1 book. [1]
6. In the following equations, make  $x$  the subject of the formula
- $y^2 = \frac{1}{3} \sqrt{\frac{3+4x}{3x+2y}}$  [2]
  - $m = \frac{2x - m^2 - 1}{x + 1}$  [1]
7. Simplify the following expressions.
- $\frac{20ab(a-2b)}{(7a-3b)(2a+b)} \div \frac{16b^2(a-2b)^2}{18a^2+9ab} - \frac{5a}{7ab-3b^2}$  [2]
  - $\frac{5}{4p} + \frac{3p+5}{2p(p-1)} - \frac{1}{p-1}$  [2]
8. Simplify the following fractions.
- $\frac{15x+y}{9x^2-4y^2} - \frac{12}{3x+2y}$  [1]
  - $\frac{75ac - 25bc + 30ad - 10bd}{5ac + 2ad + 10bc + 4bd}$  [2]