

# Algebraic Functions Test 2A

Name      Answers

7 8 9 10 **11** 12



Navigator



Assessment



Student



25 min

## Question: 1

In factorised form:  $x^3 - 64 =$

- a)  $(x+4)(x^2 + 4x + 16)$       b)  $(x+4)(x^2 + 4x - 16)$   
c)  $(x-4)(x^2 + 4x + 16)$       d)  $(x+4)(x^2 - 4x - 16)$   
e)  $(x-4)(x^2 - 4x + 16)$

## Question: 2

In factorised form:  $x^2 - 6x + 9 - 2xy + 6y =$

- a)  $(x + \sqrt{-2x(3y - xy)} - 3)(x - \sqrt{-2x(3y - xy)} - 3)$   
b)  $x^2 - 2x(y+3) - 3(2y-3)$   
c)  $2y(x-3)^2(x+3)$   
d)  $(x-3)(x-2y-3)$   
e)  $(x+3)(x-2y+3)$

## Question: 3

The sum of the coefficients in the expansion of  $(2x+3y)^5$  is equal to:

- a) 3125      b) 625      c) 32      d) 25      e) 5

## Question: 4

Given  $f(x) = \frac{x^3 + 8}{x-5} \div \frac{x^2 - 4}{5-x}$  then  $f(x)$  can also be written as:

- a)  $\frac{x^2 - 2x + 4}{2-x} \quad x \in R$       b)  $\frac{-(x^2 - 2x + 4)}{x-2} \quad x \in R / x = 2$   
c)  $\frac{x^2 - 2x + 4}{2-x} \quad x \in R / x = \{2, 5\}$       d)  $\frac{x^2 - 2x + 4}{2-x} \quad x \in R / x = \{-2, 2, 5\}$   
e)  $\frac{-(x^2 - 2x + 4)}{x-2} \quad x \in R / x = 5$

## Question: 5

$\frac{(n+4)!}{n!}$  is equal to:

- a)  $n(n+1)(n+2)(n+3)$       b)  $(n+4)(n+3)(n+2)(n+1)$   
c)  $n(n+4)(n+3)(n+2)(n+1)$       d)  $24n$   
e) None of these

**Question: 6**

Which one of the following is true for all values of  $x$  and  $y$

a)  $\sqrt{xy} = \sqrt{x}\sqrt{y}$

b)  $\sqrt{x^2y^2} = xy$

c)  $y(\sqrt{x})^2 = |x|y$

d)  $x\sqrt{y^2} = x|y|$

e)  $\frac{xy}{\sqrt{xy}} = \sqrt{xy}$

**Question: 7**

Given that  $x = 4 - \sqrt{3}$ , which one of the following expressions would result in a rational number?

a)  $x^2 - 4x + 3$

b)  $x^2 + 4x + 3$

c)  $x^2 - 4x - 3$

d)  $x^2$

e)  $x^2 - 8x + 27$

**Question: 8**

Given that  $a > b > 0$  which one of the following statements is **not** always true:

a)  $\frac{a^2 - 3ab + 2b^2}{a^2 + ab - 6b^2} = \frac{a - b}{a + 3b}$

b)  $\frac{1}{a} + \frac{1}{b} = \frac{a + b}{ab}$

c)  $\sqrt{a^2b^2} = ab$

d)  $\frac{a^2 - b^2}{a - b} = a + b$

e)  $a\sqrt{b} > b\sqrt{a}$

**Question: 9**

The set of values:  $(-4, 8] \cap [-2, 12)$  is equivalent to:

a)  $[-2, 8]$

b)  $(-4, -2] \cup [8, 12)$

c)  $(-4, 12)$

d)  $(-4, -2]$

e)  $(-2, 8)$

**Question: 10**

The sum of the coefficients of  $(x + ay)^6$  is equal to 4096. The value of  $a$  could be:

a) -5

b) 0

c) 1

d) 2

e) 4