

National 5 Mathematics

Arcs & Sectors - Solutions - 2014-2019

Marks are indicated in brackets after each question number

2015 Paper 1 Question 2, (3)

$$11 - 2(1 + 3x) < 39$$

$$11 - 2 - 6x < 39$$

$$-6x < 30$$

$$x > \frac{30}{-6}$$

$$x > -5$$

2016 Paper 1 Question 8, (3)

$$\frac{2x}{3} - \frac{5}{6} = 2x$$

Multiplying by 6 gives

$$4x - 5 = 12x$$

$$8x = -5$$

$$x = -\frac{8}{5}$$

2017 Paper 1 Question 8, (3)

$$19 + x > 15 + 3(x - 2)$$

$$19 + x > 15 + 3x - 6$$

$$10 > 2x$$

$$5 > x$$

So, $x < 5$

2018 Paper 2 Question 4, (3)

$$3x < 6(x - 1) - 12$$

$$3x < 6x - 6 - 12$$

$$3x < 6x - 18$$

$$18 < 3x$$

$$6 < x$$

$$x > 6$$

2019 Paper 1 Question 14, (3)

$$\frac{x}{2} - 1 = \frac{3 - x}{5}$$

Multiply through the equation by 10 to give

$$\frac{10x}{2} - 10 = \frac{30 - 10x}{5}$$

$$5x - 10 = 6 - 2x$$

$$7x = 16$$

$$x = \frac{16}{7}$$