

## Bridging Material Self-Mark Answers

### Answers

#### Indices:

1.  $a^5$  2.  $b$  3.  $d^{-\frac{1}{6}}$  4.  $x^{12}$  5.  $3t^2$  6.  $15r^{\frac{7}{2}}$  7.  $16t^4$  8.  $25b^4$  9.  $p^{-\frac{5}{4}}$  10.  $9x^{\frac{4}{5}}$  11.  $b^{\frac{7}{4}}$  12.  $y^{-\frac{1}{6}}$

1.  $6x^3$  2.  $10x^{\frac{1}{2}}$  3.  $\frac{2}{3}x^{-1}$  4.  $\frac{3}{4}x^{-\frac{1}{2}}$  5.  $\frac{3}{5}x^{\frac{3}{4}}$

#### Surds:

1.  $\sqrt{15}$  2.  $2\sqrt{3}$  3.  $7\sqrt{3}$  4.  $\frac{\sqrt{10}}{2}$  5.  $\frac{2\sqrt{3}}{3}$  6.  $\frac{3\sqrt{5}}{10}$  7.  $\frac{18+6\sqrt{2}}{5}$  8.  $\frac{5-2\sqrt{3}}{13}$

a)  $2\sqrt{5}cm^2$  b)  $6cm^2$  c)  $36cm^2$

a)  $30\sqrt{3}cm$  b)  $4\sqrt{10}$  c)  $18\sqrt{2}$

#### Factorising:

1.  $(x+1)(x+3)$  2.  $(x+2)(x+5)$  3.  $(x-2)(x+1)$  4.  $(x+4)(x-2)$  5.  $(x-5)(x+3)$

6.  $(x-2)(x-8)$  7.  $(x-4)(x+4)$  8.  $(x+15)(x+8)$  9.  $(2x+1)(x+1)$

10.  $(3x+1)(x-1)$  11.  $(2x+1)(2x+3)$  12.  $(4x+1)(x+4)$

1.  $x = -4$  or  $-2$  2.  $x = -5$  or  $1$  3.  $x = 8$  or  $-1$  4.  $x = \pm 5$  5.  $x = 7$  or  $-6$  6.  $x = 0$  or  $3$

7.  $x = -10$  or  $6$  8.  $x = \frac{1}{2}$  or  $x = 1$  9.  $x = \frac{1}{3}$  or  $-4$  10.  $x = 4$  or  $1$  11.  $x = 5$  or  $-2$

12.  $x = -6$  or  $-2$

#### Completing the Square

1.  $(x+1)^2 + 3$  2.  $(x-2)^2 - 3$  3.  $(x+6)^2 - 6$  4.  $(x-2)^2 + 14$  5.  $\left(x + \frac{3}{2}\right)^2 + \frac{3}{4}$

6.  $\left(x - \frac{1}{2}\right)^2 - \frac{3}{4}$

(a)  $2(x+2)^2 - 6$

(b)  $2(x+3)^2 - 21$

(c)  $3(x-2)^2 - 10$

(d)  $4(x+1.5)^2 - 14$

(e)  $2(x-0.75)^2 - 6.125$

(f)  $5(x-2)^2 + 10$

1.  $x = 2 \pm \sqrt{6}$  2.  $x = -1 \pm \sqrt{3}$  3.  $x = 3 \pm \sqrt{5}$  4.  $\frac{3}{2} \pm \frac{\sqrt{5}}{2}$

## Quadratic Graphs

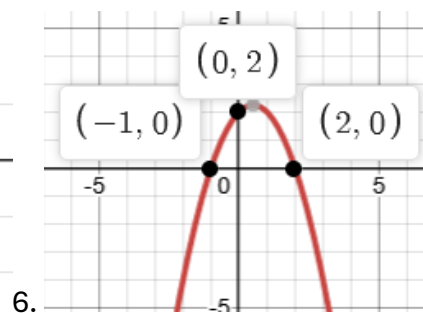
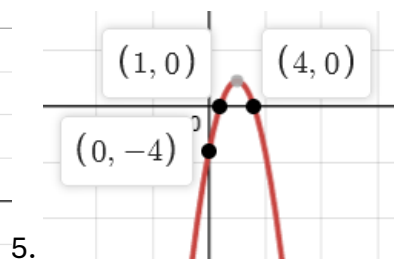
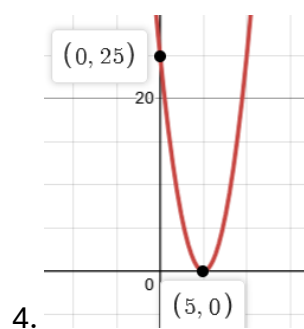
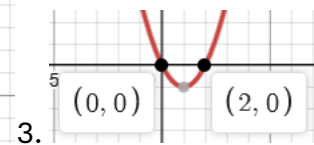
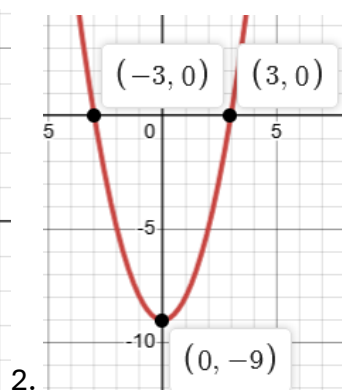
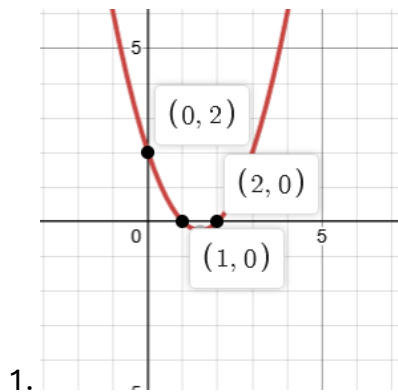
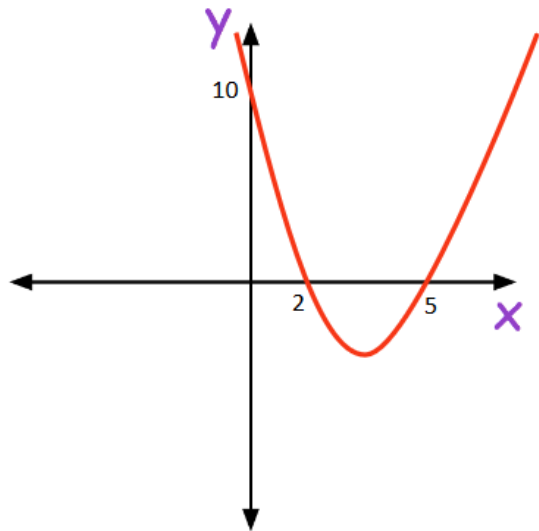
### Question 1

1a)  $y = 10$

b) It will cross at  $(0, 10)$

c)  $x = 2$  and  $x = 5$

d) It will cross at  $(2, 0)$  and  $(5, 0)$



## Simultaneous Equations

Question 1:

(a)  $x=2$   
 $y=6$

(b)  $x=1$   
 $y=3$

(c)  $x=3$   
 $y=2$

Question 2:

(a)  $x=5$   
 $y=4$

(b)  $x=5$   
 $y=2$

(c)  $x=4$   
 $y=9$

1.  $x = 1; y = 3$  2.  $x = \frac{3}{5}, y = \frac{8}{5}$  3.  $x = 7, y = 1$  4.  $x = -\frac{17}{5}, y = \frac{6}{5}$

Straight Line Graphs

1. 3      2. 1.5      3.  $-\frac{4}{5}$   
4.  $-\frac{4}{3}$       5.  $\frac{6}{11}$       6.  $-\frac{5}{8}$   
7.  $-\frac{1}{4}$       8.  $\frac{2}{3}$

Trigonometry

1. 14.28   2. 12.44   3. 2.05   4. 41.76   5. 42.833   6. 36.87   7. 11.43   8. 24.46   9. 29.47  
10. 19.5   11. 9.79   12. 70.67