

## Bridging Material Self-Mark Answers

Answers

Indices:

- |            |                        |                        |                                  |                                 |                        |
|------------|------------------------|------------------------|----------------------------------|---------------------------------|------------------------|
| 1. $a^7$   | 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. $p^{\frac{9}{20}}$  | 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. $\frac{18+6\sqrt{2}}{7}$ | 8. $\frac{5-2\sqrt{3}}{13}$ |                 |                          |                          |                           |
| a) $5\sqrt{2}cm^2$          | 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. $(x + \frac{3}{2})^2 + \frac{3}{4}$ | 6. $(x - \frac{1}{2})^2 - \frac{3}{4}$ |                  |                   |

(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

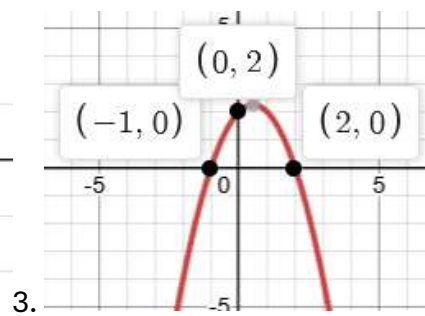
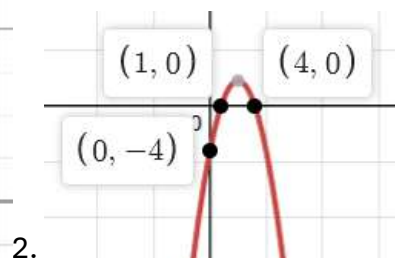
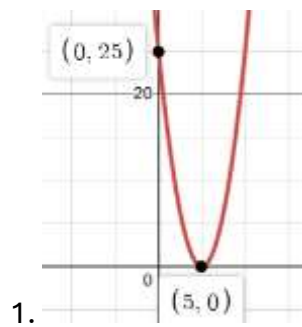
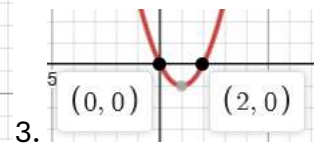
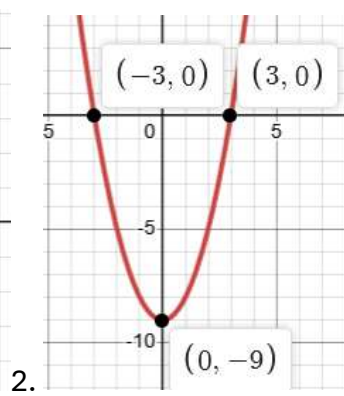
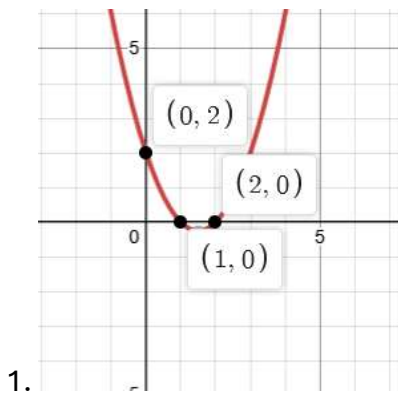
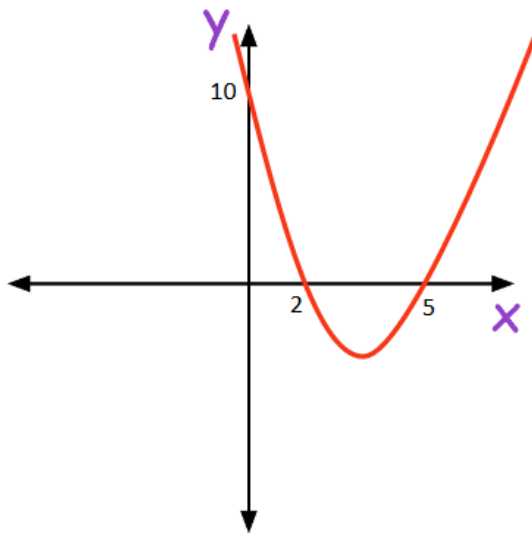
### Question 1

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

a) 14.28      b) 12.44      c) 2.05

a) 41.76      b) 42.833      c) 36.87

d) 11.43      e) 24.46      f) 29.47

d) 19.5      e) 11.15      2. 70.67