**More Maths 2 Modelling Using Curves**

1. What is usually meant by f(x)?
   1. f multiplied by x
   2. a function of x
   3. logx f
   4. fx
2. If f(x) = log (x), what is the value of f(10)?
   1. 0
   2. 1
   3. 10
   4. 10f
3. If f(x) = 4x2 + 2x – 1, what is the value of f(-2)?
   1. 19
   2. 3
   3. -13
   4. -21
4. Which of the following curves goes through the point (0,1)
   1. y = -2x2 + 3
   2. y = log10x
   3. y = 1/x
   4. y = ex
5. When is y = ax2 + bx + c a U–shaped curve?
   1. When a > 0
   2. When a < 0
   3. When c > 0
   4. When b > 0
6. At what point does y = 3x2 + 6x – 2 cross the y-axis?
   1. y = 6
   2. y = 3
   3. x = -2
   4. y = -2
7. At what point(s) does y = 4x2 – 3x + 2 cross the x-axis?
   1. x = 2
   2. At no point
   3. x = -1
   4. x = 3, -2
8. At what point(s) does y = 5x2 – 3x – 1 cross the x-axis?
   1. x = 0.8385, -0.2385
   2. At no point
   3. x = 1
   4. x = 1/5, 3/5
9. What is meant by the ‘turning point’ of a curve?
   1. the point where is passes the origin
   2. A point where its value is a minimum
   3. A point where its value is a maximum
   4. A point where its value is either a minimum or maximum

1. Where is the turning point for a quadratic equation?
   1. At the x axis
   2. At the solutions
   3. At the point where x = -b/2a
   4. At the point where b2 = 4ac
2. If profit = -0.05Q2 + 2Q + 1000, what value of Q gives the maximum profit?
   1. -20
   2. 2
   3. 20
   4. 1000
3. If profit = -0.05Q2 + 2Q + 1000 and Q=20 gives the maximum profit,, what is the value of the maximum profit?
   1. 20
   2. 163
   3. 1020
   4. 1163
4. Which of the following curves is the same as y = x2 but shifted 4 units to the left?
   1. y = x2 + 4
   2. y = x2 - 4
   3. y = (x - 4)2
   4. y = (x + 4)2

1. The revenue generated by a product is 20Q - 0.02Q2, where Q is the number of sales. What value of Q gives the highest revenue?
   1. 0
   2. 20
   3. 100
   4. 500
2. The revenue generated by a product is 20Q - 0.02Q2, where Q is the number of sales. Q=500 gives the highest revenue.What is the maximum revenue generated??
   1. -5000
   2. 500
   3. 5000
   4. There is no limit on the maximum
3. The revenue generated by a product is 20Q - 0.02Q2, where Q is the number of sales. With a maximum revenue of 5000, and costs of 2000 + 12Q, what value of Q gives the greatest profit?
   1. 200
   2. 100
   3. 500
   4. Costs are too high to make a profit
4. What does the graph of y = x6 look like?
   1. a ‘U’ shape that is symmetrical about the y axis
   2. an inverted ‘U’ shape that is symmetrical about the y axis
   3. a curve that is high on the right hand side and low on the left
   4. a curve that is high on the left hand side and low on the right
5. What does the graph of y = x5 look like?
   1. a ‘U’ shape that is symmetrical about the y axis
   2. an inverted ‘U’ shape that is symmetrical about the y axis
   3. a curve that is high on the right hand side and low on the left
   4. a curve that is high on the left hand side and low on the right
6. What is the value of 3x for large negative values of x?
   1. large negative numbers
   2. 0
   3. large positive numbers
   4. We cannot say without more information
7. Which is higher, the graph of 6log x or the graph of log x?
   1. 6logx
   2. log x
   3. sometimes one and sometimes the other
   4. it depends on the value of x
8. Evaluate y = 50x-0.30103 when x = 0.1
   1. y = 25
   2. y = 100
   3. y = 45
   4. y = 50

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| Question | Answer |
| 1 | B |
| 2 | B |
| 3 | B |
| 4 | D |
| 5 | A |
| 6 | D |
| 7 | B |
| 8 | A |
| 9 | D |
| 10 | C |
| 11 | C |
| 12 | C |
| 13 | D |
| 14 | D |
| 15 | C |
| 16 | A |
| 17 | A |
| 18 | C |
| 19 | B |
| 20 | A |
| 21 | B |