

1) In order for the polynomial expression  $(3x + 2)(2x - 3) - 2(x - 2)^2 + Ax^2 + Bx + C$  to equal 0, the values of A, B, and C are

- (A)  $A = 4, B = 3, C = 14$
- (B)  $A = -4, B = -3, C = 14$
- (C)  $A = 4, B = -3, C = 2$
- (D)  $A = -4, B = 3, C = 2$

2) Using a graphing calculator, what is the solution of the quadratic equation  $0 = 5x^2 + 12x - 5, x < 0$ , expressed to the nearest hundredth?

- (A)  $x = -5.00$
- (B)  $x = -2.76$
- (C)  $x = -1.86$
- (D)  $x = -0.54$

3) What is the value of the expression  $(15^0)(15^1)$ ?

- (A) 225
- (B) 30
- (C) 15
- (D) 0

4) Which of the following tables of values does not represent an exponential function?

(A)

x	1	2	3	4	5
y	2	8	32	128	512

(B)

x	1	2	3	4	5
y	729	486	324	216	144

(C)

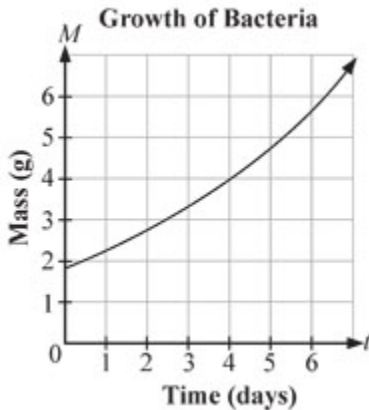
x	1	2	3	4	5
y	0.8	1.2	1.8	2.7	4.05

(D)

x	1	2	3	4	5
y	0.5	2.0	4.5	8.0	12.5

Mathematics 11 Functions  
and Applications Test

- 5) In the given graph, the mass of a certain bacteria,  $M$ , in grams is graphed as a function of time,  $t$ , in days.



How much time does it take for the mass of the bacteria to double its initial amount?

- (A) 1.9 days  
(B) 2.4 days  
(C) 3.8 days  
(D) 5.2 days
- 6) The compound interest formula  $FV = 200000(1.0075)^n$  represents the growth of a \$200000 investment over a period of time collecting an annual interest rate compounded monthly. With the aid of the TVM Solver on a graphing calculator, the correct value of  $n$  in the formula that would produce a final value of \$444888 is

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- 7) George is given the task of painting the flagpole at his school, but he has no idea how tall it is. He places a ladder three-fourths of the way up the flagpole, which makes an angle of  $65^\circ$  with the ground. The distance between the foot of the ladder and the flagpole is 1.8 m. Rounded to the nearest thousandth of a metre, the actual height of the pole is
- (A) 5.193 m  
(B) 5.147 m  
(C) 4.931 m  
(D) 4.903 m

- 8) Michelle searched a public sector employee database for statistical data that modelled a sine function. She found an example and recorded the data as a graph.



According to the approximate sinusoidal graph, the amplitude is about

- (A) 37000 people  
 (B) 27750 people  
 (C) 18500 people  
 (D) 9250 people
- 9) To the nearest tenth, the value of the amplitude in the graph

$$y = -13.2\cos 5.5(\theta - \pi) + 2.4$$

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Mathematics 11 Functions  
and Applications Test

- 10) On a particular waterslide, the height (above ground level) of a rider during the first 5 seconds can be modelled by the equation  $h(t) = 18\cos\left(\frac{\pi}{14}t + \frac{\pi}{3}\right) + 12$ , where  $h$  is the height above ground level of the rider in metres and  $t$  is the time in seconds after the rider starts down the slide. To the nearest tenth of a second, the length of time from the time the rider starts down the slide until he reaches a height of 8 m is s.

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Question	Answer
1	B
2	B
3	C
4	D
5	C
6	107
7	B
8	C
9	13.2
10	4.7