Started on	Friday, 12 January 2024, 10:01 AM
State	Finished
Completed on	Friday, 12 January 2024, 10:01 AM
Time taken	9 secs
Grade	**0.00** out of 20.00 (**0**%)

Question 1

Not answered

Marked out of 1.00

The range y of the function f defined by $f(x) = 1 - 2x - x^2$

Select one:

○ a. $y < 2$

○ b. $y \leq 2$

○ c. $y \geq -2$

○ d. $y < -2$

Your answer is incorrect.

The correct answer is: $y \leq 2$

Question 2

Not answered

Marked out of 1.00

If the graphs of $xy = 1$ and $xy = -1$ are drawn on the same set of axes, how many point(s) will they have in common?

Select one:

○ a. 0

○ b. 1

○ c. 2

○ d. Infinite

Your answer is incorrect.

The correct answer is: 0

Question 3

Not answered

Marked out of 1.00

If y = 4 and x = $\frac{1}{8}$, then the value of y in terms of x is:

Select one:

- a.   y= $\frac{2}{x}$
- b.   y=2x
- c.   y= $\frac{1}{2x}$
- d.   x=2y

Your answer is incorrect.

The correct answer is: y= $\frac{1}{2x}$

Question 4

Not answered

Marked out of 1.00

What is the range of the exponential function y = -5.3^{x+2} -2?

Select one:

- a.   {y/y > 2}
- b.   {y/y < -2}
- c.   {y/y < 2}
- d.   {y/y < -5}

Your answer is incorrect.

The correct answer is: {y/y < -2}

Question 5

Not answered

Marked out of 1.00

If xy < -1 and x < y, which of the following must always be positive?

Select one:

- a.   x – y
- b.   y – x
- c.   2x + y
- d.   x^2 – y^2

Your answer is incorrect.

The correct answer is: y – x

Question 6

Not answered

Marked out of 1.00

Amr and his friends compared the amount of time x (in hours) spent studying versus their scores y (over 10) on a Math test. The result is modeled by the linear equation y = 2.93x + 1.21. Which of the below predictions could be made?

 I. It is impossible for anyone to score below 1.21

II. The minimum number of studying hours need to get a full score is 3

III. Studying for 2 hours would guarantee a score above the average

Select one:

- a.   I only
- b.   II only
- c.   I and II only
- d.   I, II, and III

Your answer is incorrect.

The correct answer is: I and II only

Question 7

Not answered

Marked out of 1.00

If x and y are two consecutive integers and $y^2 = x^2 + z^2$, which of the following is true?

Select one:

- a.   y = x + z
- b. $z^2 = 2x + 1$
- c. $z^2 = x + 2y$
- d.   z = 1 - x
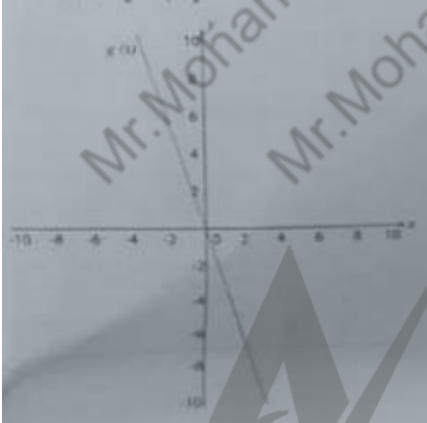
Your answer is incorrect.

The correct answer is: $z^2 = 2x + 1$

Question 8

Not answered

Marked out of 1.00

How does g(x) change over the interval [-2,2]?

Select one:

- ○ a.   g(x) decreases by 6
- ○ b.   g(x) decreases by 12
- ○ c.   g(x) decreases by 4
- ○ d.   g(x) increases by 12

Your answer is incorrect.

The correct answer is: g(x) decreases by 12

Question 9

Not answered

Marked out of 1.00

$\dfrac{ca^2 - cb^2}{a+b}$ is equivalent to ca plus

Select one:

- ○ a.   cb
- ○ b.   -cb
- ○ c.   -b
- ○ d.   1+cb

Your answer is incorrect.

The correct answer is: -cb

Question 10

Not answered

Marked out of 1.00

In the figure below, $\overline{BF}$ is perpendicular to $\overline{BE}$, and m∠FBA = 60°. What is the value of x? (figure not drawn to scale)

Select one:

○ a.   60

○ b.   120

○ c.   150

○ d.   160

Your answer is incorrect.

The correct answer is: 150

Question 11

Not answered

Marked out of 1.00

If $\frac{2x-5y}{2y}$ = -2, what is the value of $\frac{-3y}{x}$ + 1?

Select one:

○ a.   -2

○ b.   -3

○ c.   -4

○ d.   -5

Your answer is incorrect.

The correct answer is: -5

Question 12

Not answered

Marked out of 1.00

How many students are there in a class if 8 students remain unseated after 3 rows of seats are filled, and 2 students remain unseated after 4 rows of seats are filled, knowing that all the rows are the same?

Select one:

- ○ a. 24
- ○ b. 26
- ○ c. 38
- ○ d. 42

Your answer is incorrect.

The correct answer is: 26

Question 13

Not answered

Marked out of 1.00

When 5 is subtracted from $\frac{1}{5}$ of a number, the result is 10, What is the number?

Select one:

- ○ a. -25
- ○ b. 10
- ○ c. 25
- ○ d. 75

Your answer is incorrect.

The correct answer is: 75

Question 14

Not answered

Marked out of 1.00

A factor of the polynomial $x^2 - 5x + 6$ is:

Select one:

- ○ a. $x - 2$
- ○ b. $x+1$
- ○ c. $x+3$
- ○ d. $2+x$

Your answer is incorrect.

The correct answer is: $x - 2$

Question 15

Not answered

Marked out of 1.00

If 3x – 5 = 10, what is the value of 10x + 5?

Select one:

○ a. 21.7

○ b. 55

○ c. 125

○ d. 455

Your answer is incorrect.

The correct answer is: 55

Question 16

Not answered

Marked out of 1.00

Line L is perpendicular to line T of the equation 5x – 3y + 2 = 0. What is the slope Line U perpendicular to L?

Select one:

○ a. 5

○ b. $\frac{5}{3}$
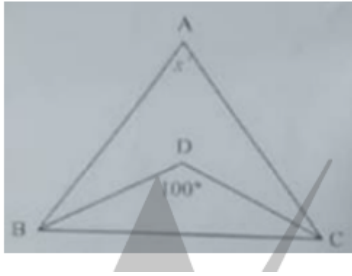
○ c. $\frac{-3}{5}$

○ d. -5

Your answer is incorrect.

The correct answer is: $\frac{5}{3}$

Question 17

Not answered

Marked out of 1.00

In the isosceles triangle ABC shown below, $\overline{BD}$ and $\overline{CD}$ are the bisectors of the base angles. What is the value of x?
(figure not drawn to scale)

Select one:

- a. 20
- b. 60
- c. 100
- d. 120

Your answer is incorrect.

The correct answer is: 20

Question 18

Not answered

Marked out of 1.00

What is/are the real value(s) of x for which $-x = \sqrt[3]{x}$?

Select one:

- a. 1
- b. -1
- c. 0
- d. -1,0,and 1

Your answer is incorrect.

The correct answer is: 0

Question 19

Not answered

Marked out of 1.00

The graph below shows a sketch of the curve with equation y = f(x)

There is only one maximum point on the curve of coordinates (3,7). What are the coordinates of the maximum point on the curve with equation y = f(x+3)? (figure not drawn to scale)

Select one:

○ a. (6,7)

○ b. (0,4)

○ c. (3,4)

○ d. (0,7)

Your answer is incorrect.

The correct answer is: (0,7)

Question 20

Not answered

Marked out of 1.00

A library charges **a** cents for the first 5 days that a book is borrowed and **b** cents for each day over the 5 days. What is the total cost for borrowing a book for **c** days where **c** is greater than 10?

Select one:

○ a. a + bc

○ b. a + b(c - 5)

○ c. a + b(c -10)

○ d. b + a(c - 10)

Your answer is incorrect.

The correct answer is: a + b(c - 5)

Started on	Friday, 12 January 2024, 10:02 AM
State	Finished
Completed on	Friday, 12 January 2024, 10:02 AM
Time taken	24 secs
Grade	**0.00** out of 38.00 (**0**%)

Question 1

Not answered

Marked out of 1.00

If you walk 4 laps on a specific track, you cover 3 miles. How many miles are you expected to be covered in total by making an additional 1 lap?

Select one:

- a. 0.75
- b. 2.25
- c. 3.75
- d. 4.75

Your answer is incorrect.

The correct answer is: 0.75

Question 2

Not answered

Marked out of 1.00

If $\frac{t}{2u}=3$, $\frac{2r}{s}=16$, and $\frac{s}{t}=2$, then $\frac{u}{r}=$

Select one:

- a. $\frac{6}{16}$
- b. $\frac{1}{96}$
- c. $\frac{8}{3}$
- d. 96

Your answer is incorrect.

The correct answer is: $\frac{1}{96}$

Question 3

Not answered

Marked out of 1.00

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

What is the solution to the equation above?

Select one:

○ a. x=-3

○ b. $x=\frac{-1}{3}$

○ c. $x=\frac{-15}{24}$

○ d. $x=\frac{15}{8}$

Your answer is incorrect.

The correct answer is: $x=\frac{-1}{3}$

Question 4

Not answered

Marked out of 1.00

If the straight line D of equation 3x + ay -1 = 0 passes through the y –intercept of straight line L of equation 2x – 3y = -2, what is the slope of d?

Select one:

○ a. -2

○ b. $\frac{2}{3}$

○ c. $\frac{-1}{2}$

○ d. -3

Your answer is incorrect.

The correct answer is: -2

Question 5

Not answered

Marked out of 1.00

Which point has the shortest distance to the origin of a coordinate plane?

Select one:

- a.   (0, -4)
- b.   (2, 6)
- c.   (-4, 1)
- d.   (-1, -5)

Your answer is incorrect.

The correct answer is: (0, -4)

Question 6

Not answered

Marked out of 1.00

A man works "a" times as fast as any one of his helpers. If the man does a job in "h" hours, how many hours are required for "w" helpers to the same job?

Select one:

- a.   ahw
- b. $\frac{hw}{a}$
- c. $\frac{aw}{h}$
- d. $\frac{ah}{w}$

Your answer is incorrect.

The correct answer is: $\frac{ah}{w}$

Question 7

Not answered

Marked out of 1.00

On a TV show, competitors have to prepare a specific meal in x minutes. The minimum length is 15 minutes, and the maximum length is 20 minutes.

Which equation represents the given situation?

Select one:

- a. |x − 20| ≤ 15
- b. |x − 17.5| ≤ 2.5
- c. |x - 15| ≤ 20
- d. |x − 2.5| ≤ 20

Your answer is incorrect.

The correct answer is: |x − 17.5| ≤ 2.5

Question 8

Not answered

Marked out of 1.00

B and C are points on segment AD such that AB = BC = CD. What ratio of BC is AD?

Select one:

- a. $\frac{1}{3}$
- b. $\frac{2}{3}$
- c. $\frac{4}{3}$
- d. 3

Your answer is incorrect.

The correct answer is: $\frac{1}{3}$

Question 9

Not answered

Marked out of 1.00

If $\log_x 6 = m$, $\log_x 3 = n$, and $6^a = 3$, then a =

Select one:

- a.   mn
- b. $\frac{n}{m}$
- c. $\frac{m}{n}$
- d.   n-m

Your answer is incorrect.

The correct answer is: $\frac{n}{m}$

Question 10

Not answered

Marked out of 1.00

Consider the system of inequalities below,

$$\begin{cases} y \geq 0 \\ x - 2 \leq -3 \\ y - x \leq 3 \end{cases}$$

The solution is a triangular region. What are Coordinates of its vertices?

Select one:

- a.   (-3,0), (1,0), (-2,1)
- b.   (-3,0), (-1, 0), (-1, 2)
- c.   (0,-3), (-1, 0), (2, 1)
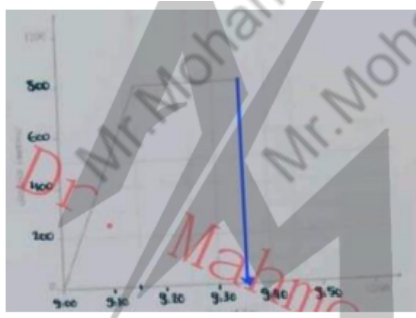- d.   (3, 0), (-1, 0), (-1, -4)

Your answer is incorrect.

The correct answer is: (-3,0), (-1, 0), (-1, 2)

Information

Questions 11 and 12 refer to the following information

Majed walks from home to the coffee shop. He spends 20 minutes drinking his coffee. He then walks back to his home at a constant speed of 4.8 km/h. The distance-time graph below shows part of his journey

Question 11

Not answered

Marked out of 1.00

Find the speed, in km/h, at which Majed walks to the coffee shop?

Select one:

- a.   0.8 km/h
- b.   2.4 km/h
- c.   3.2 km/h
- d.   8 km/h

Your answer is incorrect.

The correct answer is: 3.2 km/h

Question 12

Not answered

Marked out of 1.00

At what time does he arrive back at home?

Select one:

- a.   9:10
- b.   9:45
- c.   9:55
- d.   10:05

Your answer is incorrect.

The correct answer is: 9:45

Question 13

Not answered

Marked out of 1.00

During the festive season, a $500 item is reduced 15 percent. If a percent charge is made on the reduced price for packaging and delivery, what is the final cost of this item?

Select one:

- a. $500
- b. $361.25
- c. $350
- d. $488.75

Your answer is incorrect.

The correct answer is: $488.75

Information

Questions 14 to 18 refer to the following information
The table below shows a payroll example in a certain company

Position	No. of employees	Salary paid (in thousands)
Worker	400	550
Supervisor	15	120
Manager	3	36

Question 14

Not answered

Marked out of 1.00

The salaries paid to supervisors make up approximately what percent of the total payroll?

Select one:

- a. 15
- b. 16
- c. 17
- d. 18

Your answer is incorrect.

The correct answer is: 17

Question 15

Not answered

Marked out of 1.00

What is the average salary for all employees?

Select one:

○ a. $1689

○ b. $4725

○ c. $1375

○ d. $592

Your answer is incorrect.

The correct answer is: $1689

Question 16

Not answered

Marked out of 1.00

What is the ratio of the average salary of a manager to the average salary of a supervisor?

Select one:

○ a. $\frac{2}{3}$

○ b. $\frac{3}{2}$

○ c. $\frac{1}{5}$

○ d. $\frac{3}{10}$

Your answer is incorrect.

The correct answer is: $\frac{3}{2}$

Question 17

Not answered

Marked out of 1.00

The owner of the company decided to increase the salaries of the workers by 20% of the supervisors by 3%, and of the manager by 2%. By what percent did the average salary increase?

Select one:

○ a. 114.32

○ b. 16.19

○ c. 13.94

○ d. 25

Your answer is incorrect.

The correct answer is: 16.19

Question 18

Not answered

Marked out of 1.00

The employees decided to form committee of 3 members. In electing the three members, what is the probability to have one employee from each position?

Select one:

- a. $\frac{18000}{12085216}$
- b. $\frac{3}{418}$
- c. $\frac{418}{1254}$
- d. $\frac{1}{400}$ * $\frac{1}{15}$ * $\frac{1}{3}$

Your answer is incorrect.

The correct answer is: $\frac{18000}{12085216}$

Question 19

Not answered

Marked out of 1.00

If f(a) = a^2 + 5 for all real values of a, which of the following is a possible values of f(a)?

Select one:

- a. -1
- b. 3
- c. $\sqrt[]{5}$
- d. 2$\sqrt[]{7}$

Your answer is incorrect.

The correct answer is: 2$\sqrt[]{7}$

Question 20

Not answered

Marked out of 1.00

Of Ibrahim's salary, $\frac{1}{3}$ is spent for clothing, $\frac{2}{5}$ for food, and $\frac{1}{10}$ for transportation. What part of Ibrahim's salary is left for other expenditures and savings?

Select one:

○ a. $\frac{1}{6}$

○ b. $\frac{5}{6}$

○ c. $\frac{2}{9}$

○ d. $\frac{2}{7}$

Your answer is incorrect.

The correct answer is: $\frac{1}{6}$

Information

Questions 21 and 22 refer to the following information

Question 21

Not answered

Marked out of 1.00

Consider Amir's sale record from month 5 to month 6. What is the percent change?

Select one:

○ a. Increase by 20%

○ b. Increase by 25%

○ c. Decrease by 20%

○ d. Decrease by 25%

Your answer is incorrect.

The correct answer is: Decrease by 20%

Question 22

Not answered

Marked out of 1.00

How much greater are the sales for Amir's best month than Karim's best month?

Select one:

- a. $500
- b. $1000
- c. $1500
- d. $5000

Your answer is incorrect.
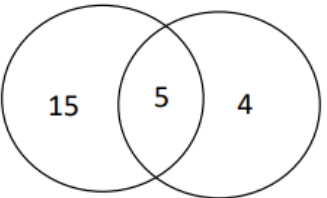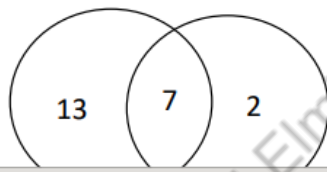
The correct answer is: $500

Question 23
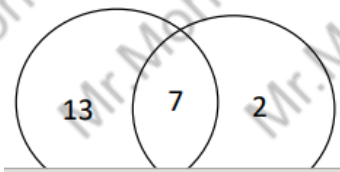
Not answered

Marked out of 1.00

In my school, the robotics club (R) has 20 students, and the public speech club (P) has 9 students. If a total of 15 members belong to only one of the two clubs, which of the following Venn diagrams is a correct representation of students in both clubs?

Select one:

a.

b.

c.

d.

Your answer is incorrect.

The correct answer is:

Question 24

Not answered

Marked out of 1.00

If $E = \dfrac{\sqrt[3]{8x^6} - 2\sqrt{y^4}}{\sqrt[3]{(x-y)^3}}$, then the simplified form

of E is:

Select one:

○ a.   2x-2y

○ b.   -2x-2y

○ c.   -2

○ d.   2x+2y

Your answer is incorrect.

The correct answer is: 2x+2y

Question 25

Not answered

Marked out of 1.00

If g(f(x)) = $8x^2$ + 2x and g(x) = $2x^2$ + x, then f(x) =

Select one:

○ a.   x+1

○ b. x^2

○ c.   2x

○ d.   x-1

Your answer is incorrect.

The correct answer is: 2x

Question 26

Not answered

Marked out of 1.00

Which of the following represents $\frac{1}{4}x^2 + x + 2$ in the form $a + (bx+c)^2$ where a, b, and c are real numbers?

Select one:

○ a. $2 + (\frac{1}{2}x + 1)^2$

○ b. $-3 + (\frac{1}{2}x + 2)^2$

○ c. $1 + (\frac{1}{2}x + 1)^2$

○ d. $\frac{1}{4} + (x + \frac{1}{2})^2$

Your answer is incorrect.

The correct answer is: $1 + (\frac{1}{2}x + 1)^2$

Question 27

Not answered

Marked out of 1.00

What kind of transformation converts the graph of f(x) = -6|x + 2| - 2 into the graph of g(x) = -6|x + 4| + 5?

Select one:

○ a.   Horizontal translation 2 units to the right and vertical translation 5 units upwards

○ b.   Horizontal translation 4 units to the left and vertical translation 3 units downward

○ c.   Horizontal translation 2 units to the left and vertical translation 7 units upwards

○ d.   Horizontal translation 2 units to the right and vertical translation 2 units upwards

Your answer is incorrect.

The correct answer is: Horizontal translation 2 units to the left and vertical translation 7 units upwards

Question 28

Not answered

Marked out of 1.00

A function f(x) increases by a factor of 4 over every unit interval in x and f(0) = 1. Which could be a function rule for f(x)?

Select one:

○ a. $f(x) = 4^x$

○ b. $f(x) = 4x$

○ c. $f(x) = 1 - \frac{x}{4}$

○ d. $f(x) = 1.04^x$

Your answer is incorrect.

The correct answer is: $f(x) = 4^x$

Question 29

Not answered

Marked out of 1.00

If the circumference of a circle increases from π cm to 2π cm, what change occurs in the area?

Select one:

- a. It remains the same
- b. It is halved
- c. It is doubled
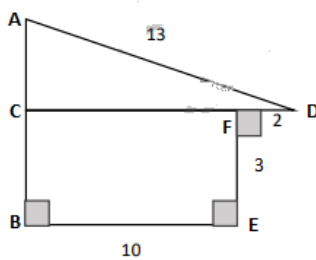- d. It is quadrupled

Your answer is incorrect.

The correct answer is: It is quadrupled

Question 30

Not answered

Marked out of 1.00

In the figure below, what is the length of AB? (figure not drawn to scale)

Select one:

- a. 5
- b. 8
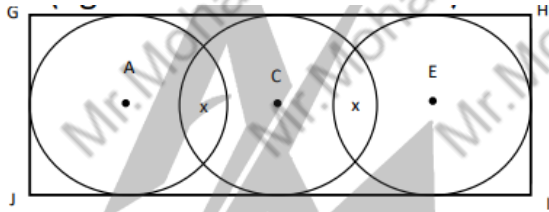- c. 10
- d. 13

Your answer is incorrect.

The correct answer is: 8

Question 31

Not answered

Marked out of 1.00

In the figure below, three equal circles of centers A, C, and E and each of radius 3 cm are inscribed in a rectangle JGHI. If x = 1 cm, then what is the perimeter of rectangle JGHI? (figure not drawn to scale)

Select one:

○ a.   32 cm

○ b.   44 cm

○ c.   48 cm

○ d.   96 cm

Your answer is incorrect.

The correct answer is: 44 cm

Question 32

Not answered

Marked out of 1.00

5 kilograms of zucchini costs as much as 7 kilograms of tomato and 1 kilogram of cucumbers. 5 kilograms of tomato costs as much as 1 kilogram of zucchini and 3 kilograms of cucumbers. How many kilograms of tomato can be purchased with the amount of money needed to purchase 8 kilograms of zucchini?

Select one:

○ a.   8

○ b.   11

○ c.   13

○ d.   15

Your answer is incorrect.

The correct answer is: 13

Question 33

Not answered

Marked out of 1.00

The gasoline indicator in Adam's car goes from $\frac{1}{3}$ to $\frac{5}{9}$ when he adds 4 gallons into the tank. What is the total capacity of the tank, in gallons, in Adam's car?

Select one:

○ a. 4

○ b. 4.5

○ c. 7.2

○ d. 18

Your answer is incorrect.

The correct answer is: 18

Question 34

Not answered

Marked out of 1.00

A company has 6 departments, each with 10 to 14 bureaus. In each bureau, there are at least 30 but no more than 50 workers. If 20% of the workers are web developers, what is the minimum number of web developers in a department?

Select one:

○ a. 36

○ b. 60

○ c. 360

○ d. 1800

Your answer is incorrect.

The correct answer is: 60

Question 35

Not answered

Marked out of 1.00

Nabil can do a job in 6 hours, and his son can do it in 10 hours. How long would it take them to do the job if they worked together?

Select one:

○ a.   0.27 hours

○ b.   3 hours

○ c.   3.75 hours

○ d.   6 hours

Your answer is incorrect.

The correct answer is: 3.75 hours

Question 36

Not answered

Marked out of 1.00

If the length of an object y is directly proportional to its weight x, and a 5 meters length weighs 2 kilograms, how many kilograms is a 2 meters length of object y?

Select one:

○ a.   0.4

○ b.   0.8

○ c.   2.5

○ d.   5

Your answer is incorrect.

The correct answer is: 0.4

Question 37

Not answered

Marked out of 1.00

A basketball team plays 78 games in the regular season. After a certain date, the team won 30 and lost 10 games. How many of the remaining games must the team win to finish the regular season winning at least 55% of the games?

Select one:

○ a.   9

○ b.   13

○ c.   15

○ d.   21

Your answer is incorrect.

The correct answer is: 13

Question 38

Not answered

Marked out of 1.00

Tomatoes originally sold at 4 kilograms for $1 were reduced in price to 2 kilograms for $0.4. By how much was the price per kilogram reduced?

Select one:

○ a.   0.05

○ b.   0.2

○ c.   0.25

○ d.   0.6

Your answer is incorrect.

The correct answer is: 0.05