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TSIA Mathematics - CRC Test 1

This test must be scored online;
there is no paper answer key.

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Student Demo

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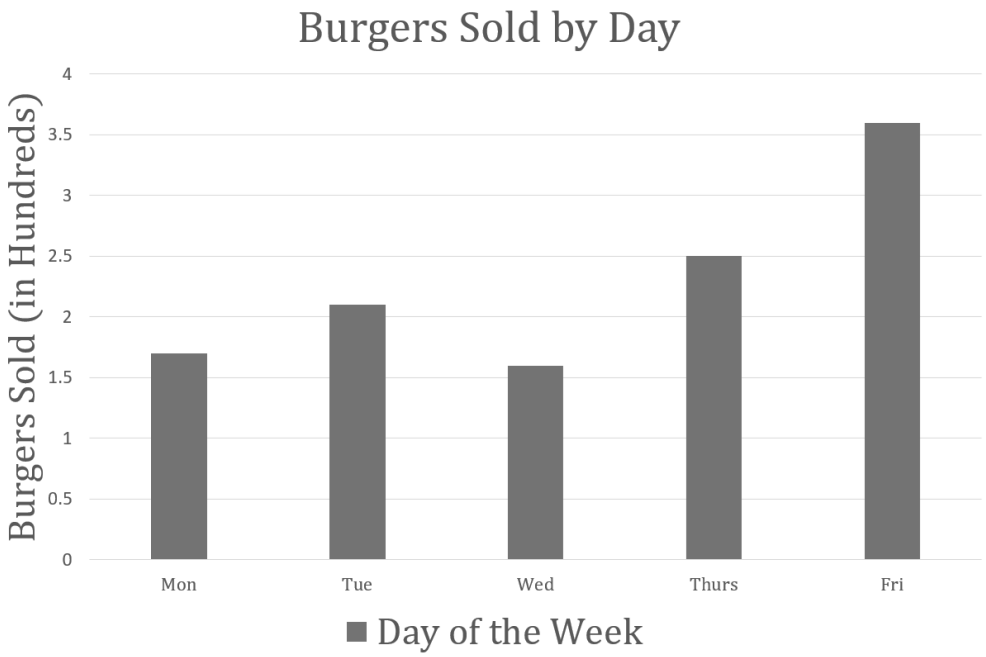
Mathematics

Instructions

The TSIA Mathematics tests focus on Mathematics skills that have been identified as essential for college and career readiness. Answer each question to the best of your ability.

1.



The bar graph above shows the number of burgers sold at a local restaurant Monday through Friday of one week. If the number of burgers sold on Saturday was a one-half increase from the number of burgers sold on Thursday, how many burgers sold at the restaurant on Saturday?

A	125
B	250
C	375
D	500

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2.

There are $2x - 7$ stalks of corn planted in each column of a rectangular piece of land. If there are a total of $8x - 28$ stalks of corn planted on the piece of land, how many columns of corn are planted?

A	4
B	$4x$
C	$6x - 21$
D	$6x - 35$

3.

If there are 2.2 pounds in 1 kilogram, how many pounds are there in 10 kilograms?

A	20
B	20.2
C	22
D	22.2

4.

A game store has 80 games stocked for a weekend sale. That weekend, 52 of the games were sold. What percent of games stocked were NOT sold that weekend?

A	28%
B	35%
C	52%
D	65%

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5.

The variables x and y are directly proportional, and $y = 3$ when $x = 5$. What is the value of y when $x = 20$?

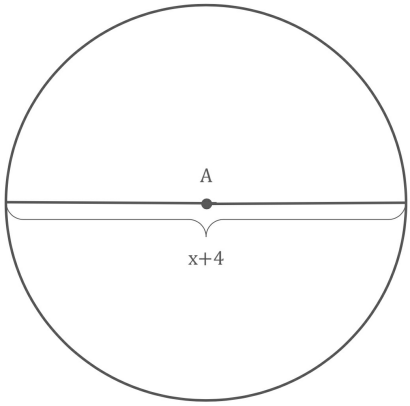
A	6
B	9
C	12
D	16

6.

$\left(\frac{x^{-6}y^2}{y^5}\right)^{-1} =$

A	$\frac{x^6}{y^3}$
B	$\frac{y^3}{x^6}$
C	x^6y^3
D	x^6y^{-3}

7.



In the circle above, A is the center and the area of the circle is 12.25π. What is the value of x?

A	3
B	4
C	11
D	12

8.

In the xy-plane, what is the x-intercept of the graph of the equation $y = 3x^2 + 30x + 75$?

A	–10
B	–5
C	3
D	5

9.

Jimmy has a pair of dice. If he rolls the pair at random, what is the probability that the sum of the two die will be at least 3?

A	$\frac{1}{36}$
B	$\frac{1}{6}$
C	$\frac{5}{6}$
D	$\frac{35}{36}$

10.

Last year, a food truck sold t tacos. This year, the food truck sold five more than three times the number of tacos it sold last year. If next year the food truck plans on selling four times the number of tacos it sold this year, how many tacos does the food truck expect to sell next year?

A	$4t$
B	$3t + 5$
C	$12t + 5$
D	$12t + 20$

11.

A teacher calculates that the mean score for her class on a test was 88. The next month, the teacher administers another test. On this test, 5 students received an 82, 1 received an 85, 3 received a 92, 4 received a 95, and 2 received a 98. What is the difference between the mean scores of the two tests?

A	1.0
B	1.2
C	1.8
D	2.0

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12.

Which of the following would represent the y-value of the y-intercept of the function $g\left(x\right) = 8(5)^{3-2x} - 2$?

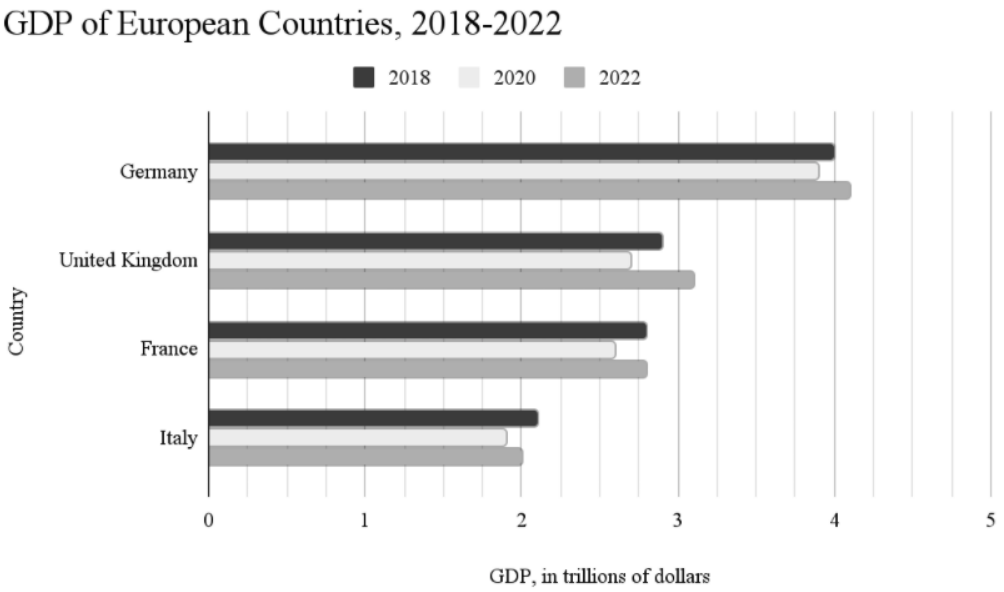
A	38
B	40
C	998
D	$1,000$

13.

If $10k - 25 = 5k$ and $18j - 17 = 17j$, then $6k - 3j + 21 =$

A	-5
B	0
C	5
D	17

14.



The economies of countries are often measured using GDP, or gross domestic product. When global economies are strong, countries have higher GDPs, and when there are international crises, like the Covid-19 pandemic (2019-2021), GDPs tend to be lower. The graph above shows the GDPs of four European economies from 2018-2022. Which country's economy had not entirely recovered from the Covid pandemic by 2022?

A Germany

B United Kingdom

C France

D Italy

15.

If $x \neq 2$ and $x \neq 4$, what is the solution to $\frac{6}{x-2} = \frac{x}{x-4}$?

A 4 and 6

B 2 and 8

C –4 and –6

D –2 and 8

16.

If r is the greater of two consecutive odd integers, which of the following does$r-(r-2)$ represent?

A	The difference of the two integers
B	The difference of the two integers doubled
C	The difference of the two integers plus 2
D	The difference of the two integers plus 2 all doubled

17.

For what value of a does $\sqrt[4]{(11x^4y^5z^{-3})^{a-2}} = 121x^8y^{10}z^{-6}$?

A	2
B	8
C	10
D	12

18.

A student created a new sport for gym class. You can either score by making a basket or getting onto the other team's field. If you make 7 baskets and 3 players get onto the other team's field, you receive 48 points. However, the student also noted that 2 players making it onto the other team's field is worth 3 baskets minus 14 points. The winning team scored 5 baskets and 11 players made it to the other field. How many points did they score?

A	8
B	22
C	30
D	52

19.

The formula for the surface area of a rectangular prism is $S = Ph + 2B$, where P is the perimeter of the base, h is the height of the prism, and B is the area of the base. And the formula for the volume of a rectangular prism is $V = Bh$, where B is the area of the base, and h is the height of the prism. A rectangular prism with a square base and a height of 10 has a surface area of 448. It is glued to an identical rectangular prism along a square base. What is the volume of the resulting shape?

A	448
B	640
C	896
D	1280

20.

In the expressions below, a is a constant. Which value of a would make the two expressions equivalent?

$-2(x-5)(x+5)$
$-2x(x+5)+a(x+5)$

A	-10
B	-2
C	2
D	10