

35:00

Section 2, Module 2: Math



1

Mark for Review

What is the value of x that satisfies the two systems of equations given below? ($x \geq 0$)

$$\begin{aligned}x^2 - y &= 18 \\ x &= 2y + 8\end{aligned}$$

(A) -4

(B) -2

(C) 2

(D) 4

TESTQUBE

Question 1 of 22 >

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2

Mark for Review

Elizabeth is participating in a quiz show. For every question she gets correct, she earns 2 points. For every question she gets incorrect, she loses 1 point. If there are a total of 20 questions and she earned 19 points in total, how many questions did she answer incorrectly?

(A) 6

(B) 7

(C) 8

(D) 9

TESTQUBE

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3

Mark for Review

If $6x - 3 = 15$, what is the value of $15x - 35$?

TESTQUBE

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4

Mark for Review

Rectangle A has a width 3cm shorter than the length. If the perimeter of rectangle A is 26, what is the width of rectangle A ?

(A) 5cm (B) 6cm (C) 7cm (D) 8cm

TESTQUBE

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5

Mark for Review

A travel agency is selling two types of tickets, Ticket *A* and Ticket *B*, for the observatory deck. Ticket *A* costs \$15 each, and Ticket *B* costs \$25 each. In one day, the travel agency sold a total of 57 tickets and earned a total revenue of \$1,065. How many Ticket *B*'s were sold that day?

(A) 7

(B) 14

(C) 21

(D) 28

TESTQUBE

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6

Mark for Review

In the given equation below, b is a constant. The equation has one real solution. What is the value of b when $b > 0$?

$$3x^2 - bx + 3 = 0$$

TESTQUBE

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7

Mark for Review

Which of the following is not a factor of $2x^3 + 7x^2 - 19x - 60$?

(A) -4

(B) 3

(C) $-5/2$ (D) $2/3$

TESTQUBE

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8

Mark for Review

Which of the following expressions is equivalent to $a^6 \div a^4$?

(A) a^{6+4} (B) a^{6-4} (C) $a^{6 \times 4}$ (D) $a^{6/4}$

TESTQUBE

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9

Mark for Review

In the xy -plane, what is the area of a polygon that satisfies the condition of the three inequalities shown below?

$$y \leq \frac{4}{3}x + 4$$

$$y \leq -x + 4$$

$$y \geq 0$$

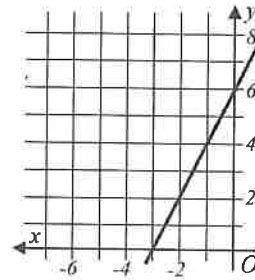
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10

Mark for Review

What is the x -intercept of the graph below?


☐ (A) $(-3, 0)$
☐ (B) $(3, 0)$
☐ (C) $(0, 6)$
☐ (D) $(6, 0)$

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Mark for Review

The function f is defined by $f(x) = 2x - 5$. In the xy -plane, the graph $f(x)$ is shifted 1 unit to the left and 4 units up. What is the x -intercept of the new function?

(A) -1

(B) -0.5

(C) 0.5

(D) 1

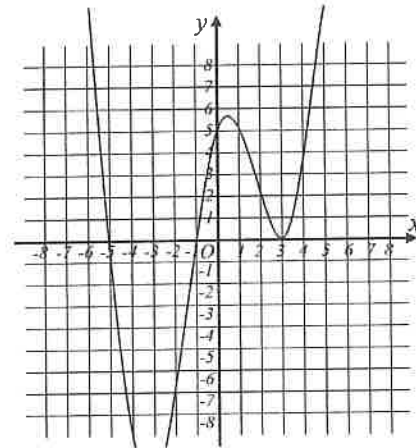
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Mark for Review

The graph of $y = g(x)$ is shown below. For how many values of x does $g(x) = 0$?



(A) 0

(B) 1

(C) 2

(D) 3

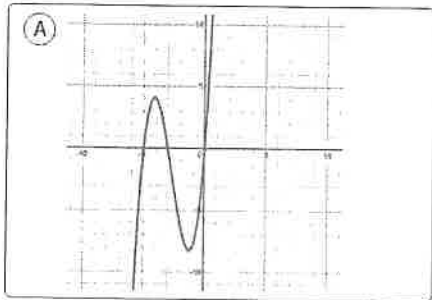
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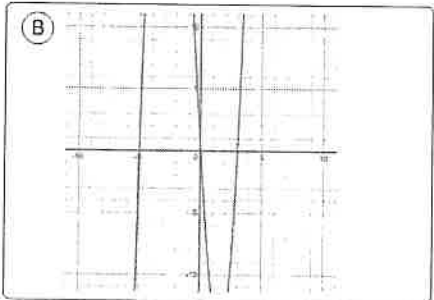
13

Mark for Review

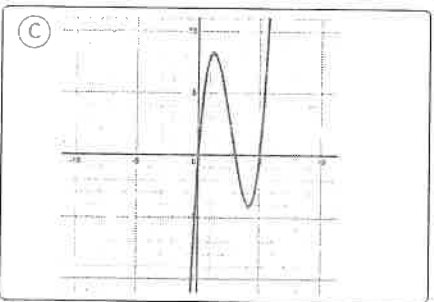
Which of the following graphs correctly represents the function $f(x) = x(x - 3)(x + 5)$?



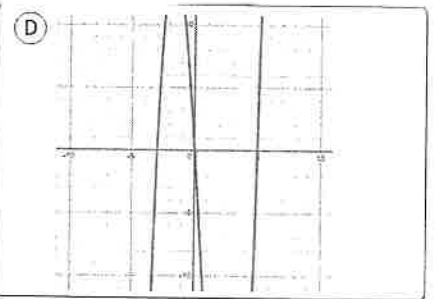
(A)



(B)



(C)



(D)

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14

Mark for Review

The equation below defines the function g . What is the maximum value of $g(x)$?

$$g(x) = -\frac{5}{3}x^2 - 10x + 9$$

TESTQUBE

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Mark for Review

For a particular factory that manufactures pens, 6 out of every 100 pens are defective. If this machine produces 500 pens a day, how many defects in total are expected to be found in a week? (The machine produces all seven days a week from Monday to Sunday.)

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Mark for Review

Alex is depositing his money at a bank. Alex estimates that, starting from present, the value of money will increase by 0.5 percent every 10 years. If the present amount of money deposited is \$7,500, which of the following represents the estimate of the amount of money, in dollars, x years from now?

☐ (A) $7,500(1.05)^{x/10}$

(A)

☐ (B) $7,500(1.005)^{x/10}$

(B)

☐ (C) $7,500(1.05)^{10/x}$

(C)

☐ (D) $7,500(1.005)^{10/x}$

(D)

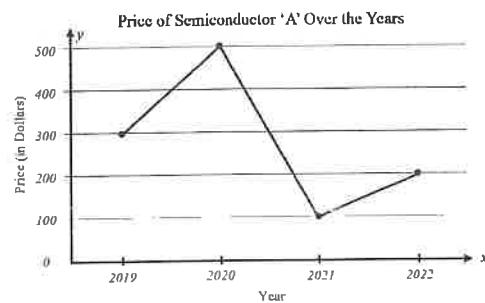
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Mark for Review

The line graph below shows the price of semiconductor A over the years from 2019 to 2022. Which time interval, spanning from 2019 to 2022, exhibits the largest difference in the price of semiconductor A ?


☐ (A) 2019 to 2020

(A)

☐ (B) 2020 to 2021

(B)

☐ (C) 2021 to 2022

(C)

☐ (D) None of the above

(D)

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18

Mark for Review

There is a 12-sided die which is labeled with a number from 1 to 12, with a different number on each side. If the die is rolled once, what is the probability the number is either an odd or even number?

- (A) 0
- (B) $1/12$
- (C) $1/2$
- (D) 1

TESTQUBE

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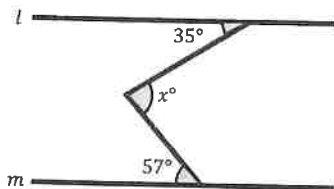
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Mark for Review

In the diagram below, the lines l and m run parallel to each other. What is the measure of angle x in degrees?



TESTQUBE

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Mark for Review

A circle has an equation of $x^2 + 6x + y^2 - 10y + 18 = 0$. What is the radius of this circle?

- (A) 2
- (B) 4
- (C) 8
- (D) 16

TESTQUBE

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21

Mark for Review

What is the circumference of a circle with an area of 16π ?

- (A) 2π
- (B) 4π
- (C) 8π
- (D) 16π

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22

Mark for Review

Find the area of a regular hexagon with each side length of 4. Round your answer to the nearest tenth.

