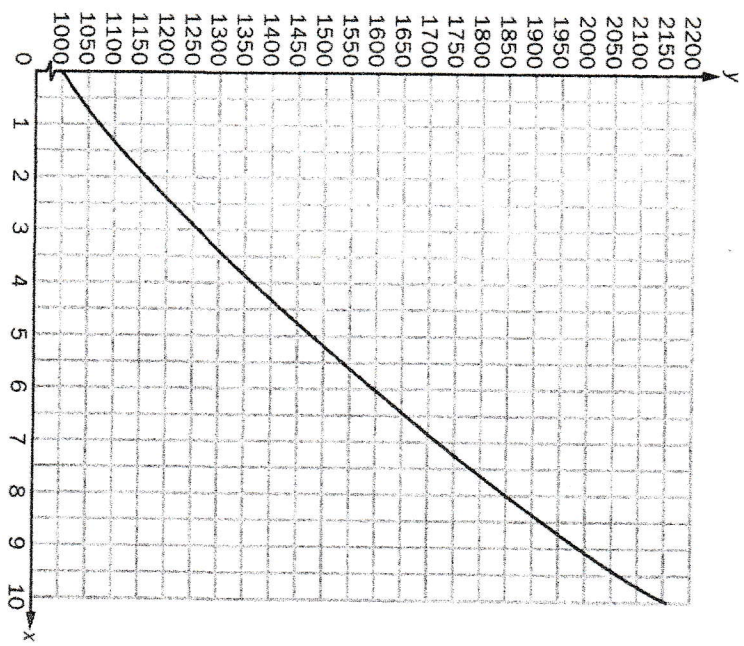


31

Miranda has an investment that earns 8% interest each year. She calculates that over the first 5 years, her \$1,000 investment will earn an average of approximately \$94 per year. At this rate, she thinks it will take more than 10 years to double her money.

The graph shows the function modeling her investment. $V(t) = 1,000(1.08)^t$, where t represents the time in years.



Approximately how many years does it actually take for Miranda to double her initial investment?

- A. 10 years
- B. 9 years
- C. 8 years
- D. 7 years

32

Which explicit formula describes the pattern in this table?

d	C
2	6.28
3	9.42
5	15.70
10	31.40

- A. $d = 3.14 \times C$
- B. $3.14 \times C = d$
- C. $31.4 \times 10 = C$
- D. $C = 3.14 \times d$

33

To rent a carpet cleaner at the hardware store, there is a set fee and an hourly rate. The rental cost, C , can be determined using this equation when the carpet cleaner is rented for h hours.

$$C = 25 + 3h$$

Which of these is the hourly rate?

- A. 3
- B. $3h$
- C. 25
- D. $25h$

34

What explicit expression can be used to find the next term in this sequence?

2, 8, 18, 32, 50, ...

- A. $2n$
- B. $2n + 6$
- C. $2n^2$
- D. $2n^2 + 1$

35

Use the Quadratic Formula to find the exact solutions of the equation $2x^2 - 6x + 3 = 0$.

- A $\frac{3 \pm \sqrt{3}}{2}$
- B $\frac{3 \pm \sqrt{2}}{4}$
- C $\frac{2 \pm \sqrt{5}}{3}$
- D $\frac{5 \pm \sqrt{2}}{2}$

36 Jason is playing games at a family fun center. So far he has won 38 prize tickets. How many more tickets would he need to win to place him in the gold prize category?

Number of Tickets	Prize Category
1-20	bronze
21-40	silver
41-60	gold
61-80	platinum

- A $2 \leq t \leq 22$
- B $3 \leq t \leq 22$
- C $1 \leq t \leq 20$
- D $3 \leq t \leq 20$

37 Look at the expression.

$2\sqrt{8} \cdot \sqrt{20}$

- A. $2\sqrt{28}$
- B. 5
- C. $8\sqrt{10}$
- D. $32\sqrt{10}$

Which of these is equivalent to this expression?

38

The table defines a quadratic function.

x	y
-1	5
0	1
1	-1
3	1

What is the average rate of change between $x = -1$ and $x = 1$?

- A. undefined
- B. $-\frac{1}{3}$
- C. -3
- D. -4

39 Use substitution to solve the system of equations below.

$$\begin{cases} y = 4x - 7 \\ 3x - 2y = -1 \end{cases}$$

- A (3, 5)
- B (4, -1)
- C (5, -2)
- D (-6, 2)

40 Which of the following is an equation of the line perpendicular to $4x - 2y = 6$ and passing through (4, -4)?

- A $y = -\frac{3}{4}x + 3$
- B $y = -\frac{3}{4}x - 1$
- C $y = -\frac{1}{2}x - 4$
- D $y = -\frac{1}{2}x - 2$

43 Write a slope

- A $y =$
- B $y =$
- C $y =$
- D $y =$

44