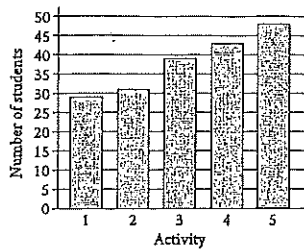


NTI Precalculus (Curlin 4th period)

Part I SAT Review

Day 1 1-9
Day 2 10-18



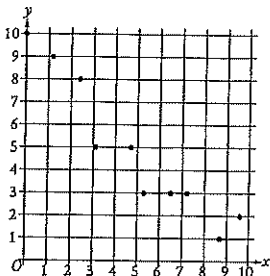
A group of students voted on five after-school activities. The bar graph shows the number of students who voted for each of the five activities. How many students chose activity 3?

- A) 25
- B) 39
- C) 48
- D) 50

What percentage of 300 is 75?

- A) 25%
- B) 50%
- C) 75%
- D) 225%

A scatterplot shows the relationship between two variables, x and y .



Which of the following equations is the most appropriate linear model for the data shown?

- A) $y = 0.9 + 9.4x$
- B) $y = 0.9 - 9.4x$
- C) $y = 9.4 + 0.9x$
- D) $y = 9.4 - 0.9x$

$$2.5b + 5r = 80$$

The given equation describes the relationship between the number of birds, b , and the number of lizards, r , that can be cared for at a pet care business each day. If the business cares for 16 reptiles on a given day, how many birds can it care for on this day?

- A) 0
- B) 5
- C) 40
- D) 80

3

$$\frac{x^2}{25} = 36$$

What is a solution to the given equation?

- A) 6
- B) 30
- C) 450
- D) 900

4

3 more than 8 times a number x is equal to 83. Which equation represents this situation?

- A) $(3)(8)x = 83$
- B) $8x = 83 + 3$
- C) $3x + 8 = 83$
- D) $8x + 3 = 83$

Hana deposited a fixed amount into her bank account each month. The function $f(t) = 100 + 25t$ gives the amount, in dollars, in Hana's bank account after t monthly deposits. What is the best interpretation of 25 in this context?

- A) With each monthly deposit, the amount in Hana's bank account increased by \$25.
- B) Before Hana made any monthly deposits, the amount in her bank account was \$25.
- C) After 1 monthly deposit, the amount in Hana's bank account was \$25.
- D) Hana made a total of 25 monthly deposits.

A customer spent \$27 to purchase oranges at \$3 per pound. How many pounds of oranges did the customer purchase?

Jasir bought 9 storage bins that were each the same price. He used a coupon for \$63 off the entire purchase. The cost for the entire purchase after using the coupon was \$27. What was the original price, in dollars, for 1 storage bin?

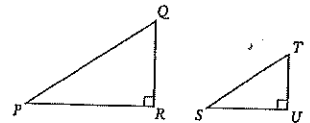
8

x	$f(x)$
0	29
1	32
2	35

For the linear function f , the table shows three values of x and their corresponding values of $f(x)$. Which equation defines $f(x)$?

- A) $f(x) = 3x + 29$
- B) $f(x) = 29x + 32$
- C) $f(x) = 35x + 29$
- D) $f(x) = 32x + 35$

9

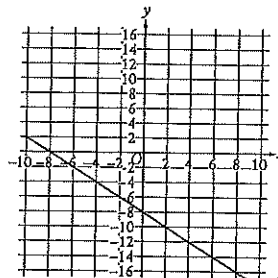


Note: Figures not drawn to scale.

Right triangles PQR and STU are similar, where P corresponds to S. If the measure of angle Q is 18° , what is the measure of angle S?

- A) 18°
- B) 72°
- C) 82°
- D) 162°

12



What is an equation of the graph shown?

- A) $y = -2x - 8$
- B) $y = x - 8$
- C) $y = -x - 8$
- D) $y = 2x - 8$

15

Line t in the xy -plane has a slope of $-\frac{1}{3}$ and passes through the point $(9, 10)$. Which equation defines line t ?

- A) $y = 13x - \frac{1}{3}$
- B) $y = 9x + 10$
- C) $y = -\frac{x}{3} + 10$
- D) $y = -\frac{x}{3} + 13$

17

For a certain rectangular region, the ratio of its length to its width is 35 to 10. If the width of the rectangular region increases by 7 units, how must the length change to maintain this ratio?

- A) It must decrease by 24.5 units.
- B) It must increase by 24.5 units.
- C) It must decrease by 7 units.
- D) It must increase by 7 units.

18

Square P has a side length of x inches. Square Q has a perimeter that is 176 inches greater than the perimeter of square P. The function f gives the area of square Q, in square inches. Which of the following defines f ?

- A) $f(x) = (x + 44)^2$
- B) $f(x) = (x + 176)^2$
- C) $f(x) = (176x + 44)^2$
- D) $f(x) = (176x + 176)^2$

16

The function $f(x) = 206(1.034)^x$ models the value, in dollars, of a certain bank account by the end of each year from 1957 through 1972, where x is the number of years after 1957. Which of the following is the best interpretation of " $f(5)$ is approximately equal to 243" in this context?

- A) The value of the bank account is estimated to be approximately 5 dollars greater in 1962 than in 1957.
- B) The value of the bank account is estimated to be approximately 243 dollars in 1962.
- C) The value, in dollars, of the bank account is estimated to be approximately 5 times greater in 1962 than in 1957.
- D) The value of the bank account is estimated to increase by approximately 243 dollars every 5 years between 1957 and 1972.

13

If $\frac{x}{8} = 5$, what is the value of $\frac{8}{x}$?

14

$$\begin{aligned} 24x + y &= 48 \\ 6x + y &= 72 \end{aligned}$$

The solution to the given system of equations is (x, y) . What is the value of y ?

DAY 3 Simplify.

- 1) $3\sqrt{8} - 3\sqrt{8}$
 3) $3\sqrt{2} - 2\sqrt{18}$
 5) $-3\sqrt{12} - 3\sqrt{12}$
 7) $-3\sqrt{6} - 2\sqrt{54}$

- 2) $2\sqrt{2} + 2\sqrt{8}$
 4) $2\sqrt{2} + 2\sqrt{18}$
 6) $-2\sqrt{3} - 3\sqrt{3}$
 8) $3\sqrt{24} + 2\sqrt{54}$

DAY 4 Simplify.

- 9) $\sqrt{15}(4 + \sqrt{3})$
 11) $5\sqrt{15}(\sqrt{3} - 4\sqrt{10})$
 13) $\sqrt{15}(-2\sqrt{10} - 3\sqrt{6})$
 15) $\sqrt{3}(\sqrt{10} + \sqrt{6})$

- 10) $\sqrt{15}(\sqrt{2} + \sqrt{10})$
 12) $\sqrt{15}(\sqrt{5} + 2)$
 14) $\sqrt{6}(-2\sqrt{2} - \sqrt{6})$
 16) $-\sqrt{6}(\sqrt{3} + 5\sqrt{10})$

DAY 5 Solve each equation by factoring.

- 17) $6v^2 + 25v = -4$
 19) $14b^2 + 5b = 6$
 21) $14p^2 = -4 - 15p$
 23) $8p^2 - 11p = 10$

- 18) $5m^2 + 16 = 18m$
 20) $35k^2 + 82k = -48$
 22) $7x^2 + 12 = -20x$
 24) $15p^2 = -14p + 49$

DAY 6 Solve each equation with the quadratic formula.

- 25) $6n^2 - 11n - 21 = 0$
 27) $3a^2 + 5a - 68 = 0$
 29) $12p^2 - 21 = 0$
 31) $12x^2 + 6x + 2 = 0$

- 26) $11x^2 + x - 18 = 0$
 28) $10x^2 - 3x - 19 = 0$
 30) $v^2 + 2v - 8 = 0$
 32) $2x^2 - 50 = 0$

DAY 7 Simplify each expression.

- 33) $\frac{3n}{n-4} - \frac{6}{n+2}$
 35) $\frac{3}{n-4} - \frac{3}{n+6}$
 37) $\frac{6b}{b-3} - \frac{b+6}{6}$

- 34) $4r + \frac{3r}{3r^2 - 15r + 12}$
 36) $\frac{n+3}{n+1} + \frac{2n}{3}$
 38) $\frac{5n}{3n+6} + \frac{4n}{2n+6}$

DAY 8 Simplify each expression.

- 39) $(3x^3 + 4x^4 + 1) + (3x^3 - 7 - 8x^4)$
 41) $(5p^2 + 6p^4 - 5p) - (p + 7p^2 - 8p^4)$
 43) $(2x - 3x^4 - 6x^2) + (8x^4 + 7x + 4)$
 45) $(3x - 8x^4 + 8) - (8x^4 - 2x + 1)$

- 40) $(5b^3 + 2b + b^4) - (8b^3 + 5b^4 - 2b)$
 42) $(k^3 - 8k - 3k^2) + (7k^2 - k^3 + 3k)$
 44) $(4 + 3v + v^2) + (8 - 6v^2 - 2v)$
 46) $(2x^3 + 6 - x^2) + (7x^2 - 3x^3 + x^4)$

DAY 9 Find each product.

- 47) $(4r + 1)(2r^2 + 3r - 4)$
 49) $(3k + 7)(7k^2 + 7k + 7)$
 51) $(x - 7)(8x^2 + 7x - 8)$

- 48) $(5n - 2)(7n^2 - 5n + 8)$
 50) $(n + 5)(6n^2 - 7n - 8)$
 52) $(5x - 2)(3x^2 + 7x + 1)$

DAY 10 Solve each equation.

- 53) $\frac{|2 + 5x|}{6} = 1$
 55) $\frac{|9a - 8|}{10} = 1$

- 54) $10 + |-6m - 6| = 22$
 56) $|9p - 10| - 6 = 20$