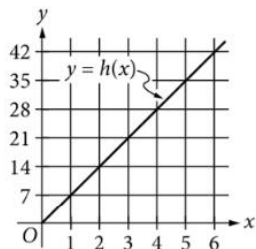


Openers

SAT (Algebra 2, Pre-Calculus, Calculus)



The line in the xy -plane above represents the relationship between the height $h(x)$, in feet, and the base diameter x , in feet, for cylindrical Doric columns in ancient Greek architecture. How much greater is the height of a Doric column that has a base diameter of 5 feet than the height of a Doric column that has a base diameter of 2 feet?

- A) 7 feet
- B) 14 feet
- C) 21 feet
- D) 24 feet

Juan purchased an antique that had a value of \$200 at the time of purchase. Each year, the value of the antique is estimated to increase 10% over its value the previous year. The estimated value of the antique, in dollars, 2 years after purchase can be represented by the expression $200a$, where a is a constant. What is the value of a ?

PRE-PRE-ALGEBRA



WARM-UP:

For Exercises 6 and 7, use the table below.

Favorite Breakfast Foods					
e	c	e	p	c	c
c	p	p	e	c	e
c	e	c	p	p	e

c = cereal, e = eggs, p = pancakes

Frequency Table

FOOD	TALLY	FREQUENCY
eggs		6
cereal		7
pancakes		5

6. Make a frequency table of the data.
7. What is the favorite breakfast food?

cereal

PRE-ALGEBRA

Try This...

Monday, October 18, 2021 8:53 AM

Find the prime factors
for this monomial.

$$\begin{array}{l} \textcircled{-1} \textcircled{80} x^2 y^3 \\ \quad \uparrow \\ \quad \textcircled{-1} \textcircled{80} \end{array} = \boxed{-1 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 5 \cdot x \cdot x \cdot y \cdot y \cdot y}$$

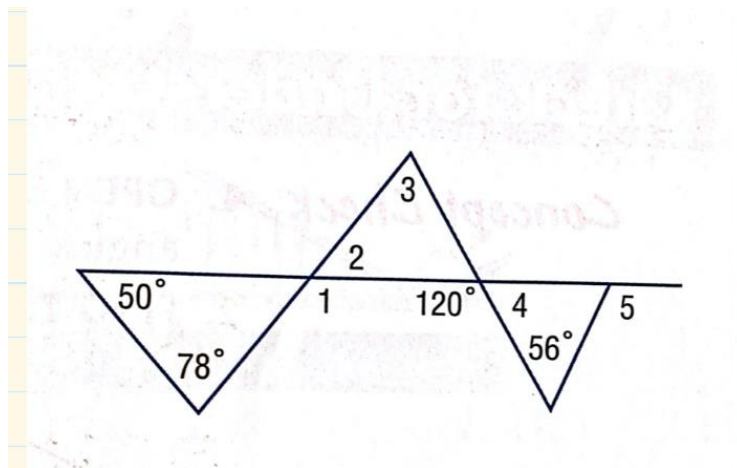
ALGEBRA 1

Try this brain teaser math problem

9. There were 12 toys in Bag P and 66 toys in Bag Q. After Mrs. Murray added the same number of toys to each bag, Bag Q had 3 times as many toys as Bag P. How many toys did she add to each bag?

GEOMETRY

Find all the numbered angles



ALGEBRA 2

4.1 Try this:

If $a + b = 2$, find the value of $a^3 + 2a^2b + ab^2 + 2ab + 2b^2$

$$\begin{aligned} a &= 0 \\ b &= 2 \end{aligned} \quad \therefore$$

$$0 + 0 + 0 + 0 + 2(4) = 8$$

$$\begin{aligned} a &= 1 \\ b &= 1 \end{aligned} \quad \therefore$$

$$1 + 2 + 1 + 2 + 2 = 8$$

$$\begin{aligned} a &= -5 \\ b &= 7 \end{aligned}$$

$$\text{~~~~~} = 8$$

$$a(a^2 + 2ab + b^2) + 2b(a+b)$$

$$a(a+b)(a+b) + 2b(a+b)$$

$$4a + 4b$$

$$4(a+b)$$

$$4(2)$$

$$8 \quad \therefore$$

PRE-CALCULUS

$$y = -(x - 3)^2 + a$$

In the equation above, a is a constant. The graph of the equation in the xy -plane is a parabola. Which of the following is true about the parabola?

- A) Its minimum occurs at $(-3, a)$.
- B) Its minimum occurs at $(3, a)$.
- C) Its maximum occurs at $(-3, a)$.
- D) Its maximum occurs at $(3, a)$.

CALCULUS

77. Let f be a function that is continuous on the closed interval $[1, 3]$ with $f(1) = 10$ and $f(3) = 18$. Which of the following statements must be true?

(A) $10 \leq f(2) \leq 18$

(B) f is increasing on the interval $[1, 3]$.

(C) $f(x) = 17$ has at least one solution in the interval $[1, 3]$.

(D) $f'(x) = 8$ has at least one solution in the interval $[1, 3]$.

(E) $\int_1^3 f(x) dx > 20$

78. For $t \geq 0$ hours, H is a differentiable function of t that gives the temperature, in degrees Celsius, at an Arctic weather station. Which of the following is the best interpretation of $H'(24)$?

(A) The change in temperature during the first day

(B) The change in temperature during the 24th hour

(C) The average rate at which the temperature changed during the 24th hour

(D) The rate at which the temperature is changing during the first day

(E) The rate at which the temperature is changing at the end of the 24th hour