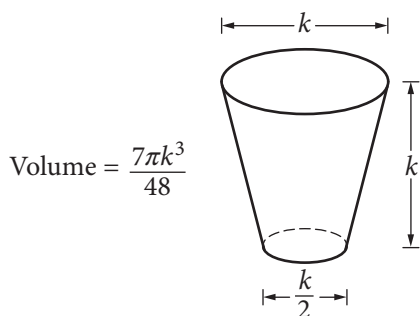




Questions 9-11 refer to the following information.



The glass pictured above can hold a maximum volume of 473 cubic centimeters, which is approximately 16 fluid ounces.

9

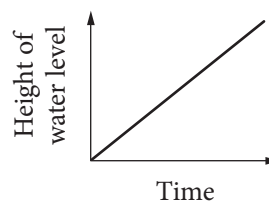
What is the value of k , in centimeters?

- A) 2.52
- B) 7.67
- C) 7.79
- D) 10.11

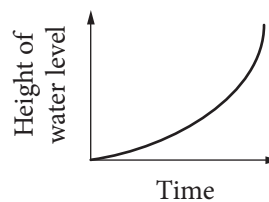
10

Water pours into the glass slowly and at a constant rate. Which of the following graphs best illustrates the height of the water level in the glass as it fills?

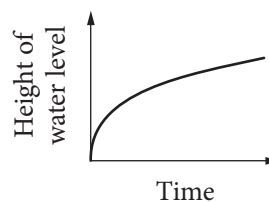
A)



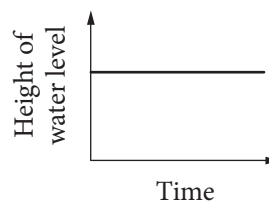
B)



C)



D)





11

Jenny has a pitcher that contains 1 gallon of water. How many times could Jenny completely fill the glass with 1 gallon of water? (1 gallon = 128 fluid ounces)

- A) 16
- B) 8
- C) 4
- D) 3

12

Roberto is an insurance agent who sells two types of policies: a \$50,000 policy and a \$100,000 policy. Last month, his goal was to sell at least 57 insurance policies. While he did not meet his goal, the total value of the policies he sold was over \$3,000,000. Which of the following systems of inequalities describes x , the possible number of \$50,000 policies, and y , the possible number of \$100,000 policies, that Roberto sold last month?

- A) $x + y < 57$
 $50,000x + 100,000y < 3,000,000$
- B) $x + y > 57$
 $50,000x + 100,000y > 3,000,000$
- C) $x + y < 57$
 $50,000x + 100,000y > 3,000,000$
- D) $x + y > 57$
 $50,000x + 100,000y < 3,000,000$

13

If $a^{-\frac{1}{2}} = x$, where $a > 0$, what is a in terms of x ?

- A) \sqrt{x}
- B) $-\sqrt{x}$
- C) $\frac{1}{x^2}$
- D) $-\frac{1}{x^2}$

14

Which of the following is a value of x for which the expression $\frac{-3}{x^2 + 3x - 10}$ is undefined?

- A) -3
- B) -2
- C) 0
- D) 2



15

A granite block in the shape of a right rectangular prism has dimensions 30 centimeters by 40 centimeters by 50 centimeters. The block has a density of 2.8 grams per cubic centimeter. What is the mass of the block, in grams? (Density is mass per unit volume.)

- A) 336
- B) 3,360
- C) 16,800
- D) 168,000

16

Number of Adults Contracting Colds

	Cold	No cold	Total
Vitamin C	21	129	150
Sugar pill	33	117	150
Total	54	246	300

The table shows the results of a research study that investigated the therapeutic value of vitamin C in preventing colds. A random sample of 300 adults received either a vitamin C pill or a sugar pill each day during a 2-week period, and the adults reported whether they contracted a cold during that time period. What proportion of adults who received a sugar pill reported contracting a cold?

- A) $\frac{11}{18}$
- B) $\frac{11}{50}$
- C) $\frac{9}{50}$
- D) $\frac{11}{100}$

17

Ages of 20 Students Enrolled
in a College Class

Age	Frequency
18	6
19	5
20	4
21	2
22	1
23	1
30	1

The table above shows the distribution of ages of the 20 students enrolled in a college class. Which of the following gives the correct order of the mean, median, and mode of the ages?

- A) mode < median < mean
- B) mode < mean < median
- C) median < mode < mean
- D) mean < mode < median