

(41) Simplify  $\frac{1}{4 + \sqrt{2}}$ .

A  $\frac{4 + \sqrt{2}}{14}$

B  $\frac{2 - \sqrt{2}}{7}$

C  $\frac{4 - \sqrt{2}}{14}$

D  $\frac{2 + \sqrt{2}}{7}$

(42) Which value is an irrational number?

A  $4 + \sqrt{7}$

B  $\sqrt{2}\sqrt{8}$

C  $\frac{\sqrt{3}\sqrt{12}}{5}$

D  $\sqrt{3} - \sqrt{3}$

an equation in slope-intercept form with  
slope of  $\frac{9}{10}$  and  $y$ -intercept of 3.

$3x + \frac{9}{10}$

$\frac{9}{10}x + 3$

$\frac{9}{10}x - 3$

$3x - \frac{9}{10}$

Evaluate  $(4.2 \times 10^6)(5.7 \times 10^8)$ .

A  $2.394 \times 10^{15}$

B  $23.94 \times 10^{14}$

C  $9.9 \times 10^{14}$

D  $2.394 \times 10^{48}$

445 The expression  $3n + 1$  gives the total number of squares needed to make each figure of the pattern where  $n$  is the figure number. How many squares will be needed to make Figure 9?

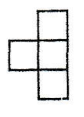


Figure 1

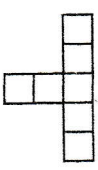


Figure 2

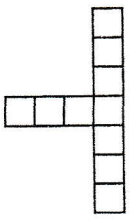


Figure 3

- A 28 squares
- B 32.5 squares
- C 56 squares
- D 88.5 squares

446 A random group of high school students was surveyed. Each student was asked whether it should be mandatory for all high school students to participate in a sport. The results are partially summarized in the two-way table.

	Agree	Disagree	No Opinion	Total
Freshman	53	12	7	
Sophomore	65	37	2	104
Junior	18	42	12	
Senior	56	67	4	
Total		158		375

In the freshman group, what percentage of students agree that it should be mandatory for all students to participate in a sport?

- A. 14.1%
- B. 22.6%
- C. 53%
- D. 73.6%

447 The function  $s(t) = vt + h - 0.5at^2$  represents the height of an object,  $s$ , from the ground after the time,  $t$ , when the object is thrown with an initial velocity of  $v$  at an initial height of  $h$  and where  $a$  is the acceleration due to gravity (32 feet per second squared).

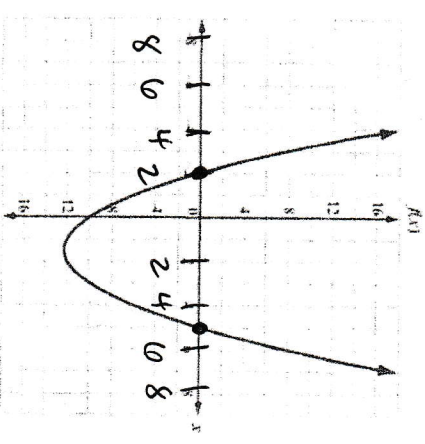
A baseball player hits a baseball 4 feet above the ground with an initial velocity of 80 feet per second. About how long will it take the baseball to hit the ground?

- A. 2 seconds
- B. 3 seconds
- C. 4 seconds
- D. 5 seconds

448 Which function shows the function  $f(x) = 3^x$  being translated 5 units to the left?

- A.  $f(x) = 3^x - 5$
- B.  $f(x) = 3^{(x+5)}$
- C.  $f(x) = 3^{(x-5)}$
- D.  $f(x) = 3^x + 5$

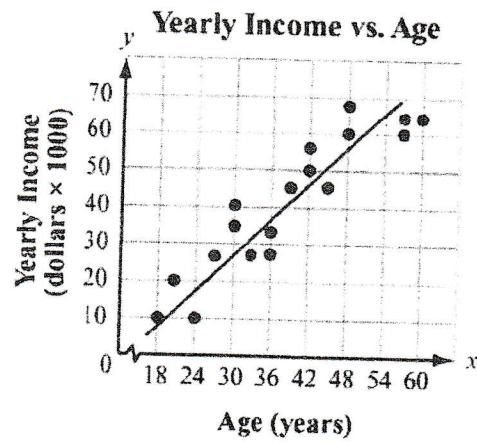
Use this graph to answer the question.



Which function is shown in the graph?

- A.  $f(x) = x^2 - 3x - 10$
- B.  $f(x) = x^2 + 3x - 10$
- C.  $f(x) = x^2 + x - 12$
- D.  $f(x) = x^2 - 5x - 8$

This scatter plot suggests a relationship between the variables age and income.



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What is the domain of the ages considered by researchers?

- A. 0-18 years
- B. 18-48 years
- C. 36-60 years
- D. 18-60 years