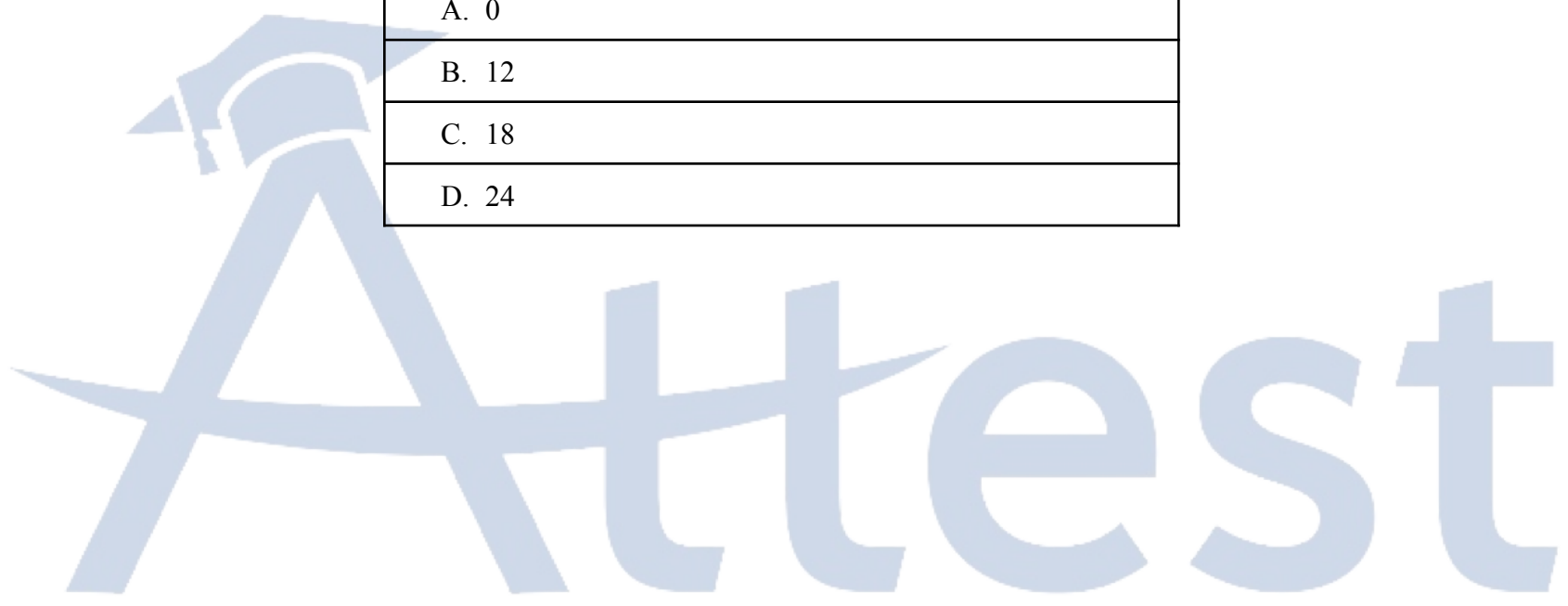


1If $(r + 9) - 6 = 15$, then $r =$

A. 0
B. 12
C. 18
D. 24



2

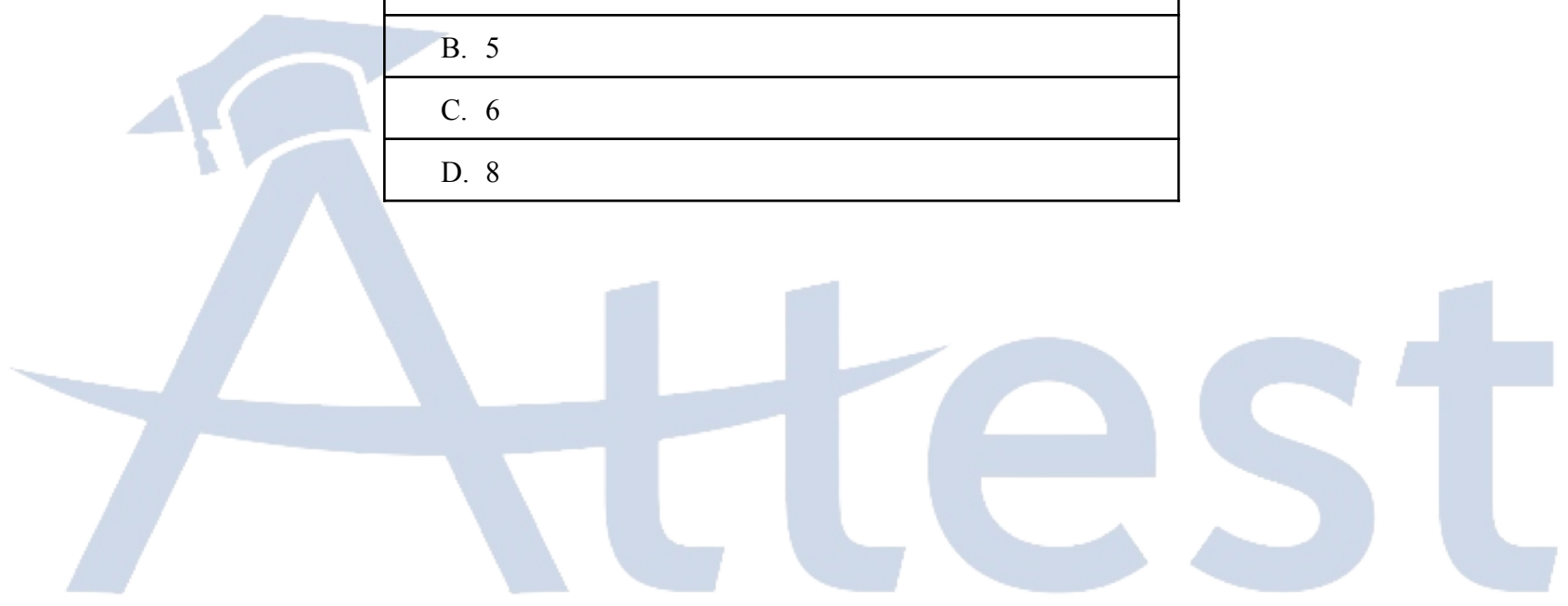
$$(z - 3)^2 + 11 = 36$$

A. 3

B. 5

C. 6

D. 8

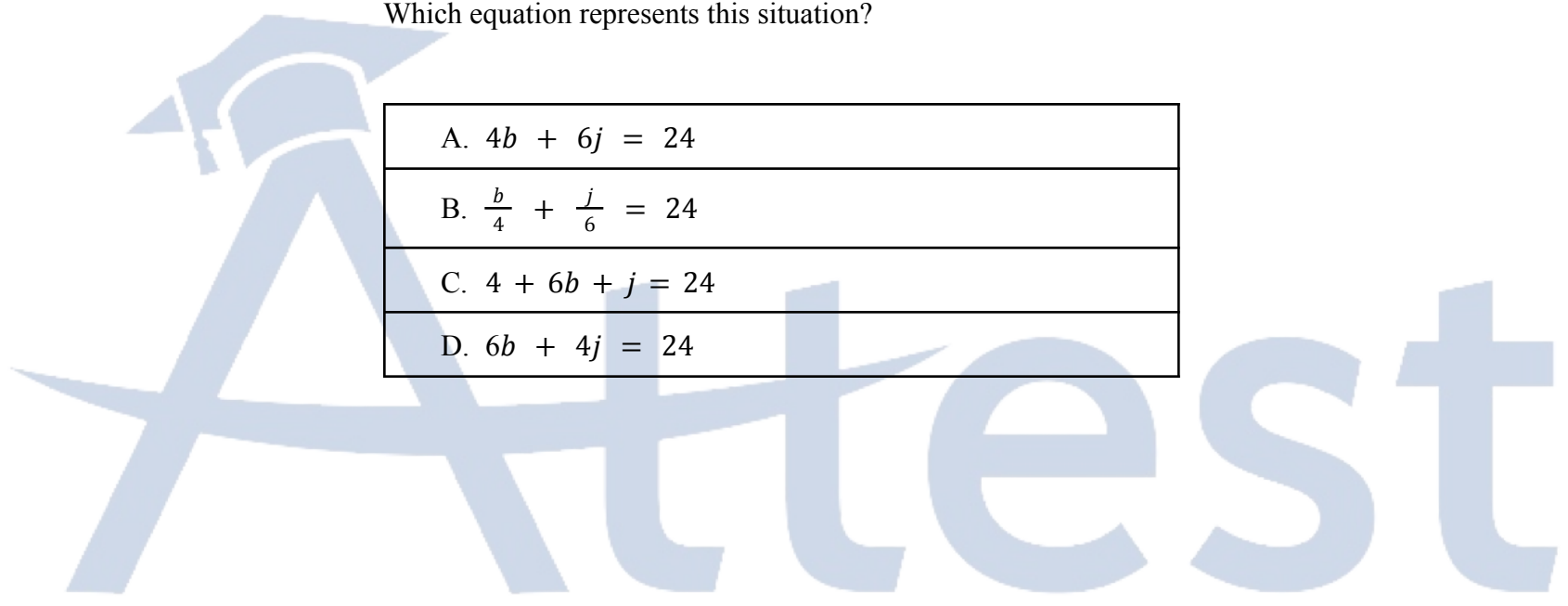


3

Sam bikes at a speed of 4 miles per hour and jogs at a speed of 6 miles per hour. She bikes for b hours and jogs for j hours for a combined total of 24 miles.

Which equation represents this situation?

A. $4b + 6j = 24$
B. $\frac{b}{4} + \frac{j}{6} = 24$
C. $4 + 6b + j = 24$
D. $6b + 4j = 24$



4

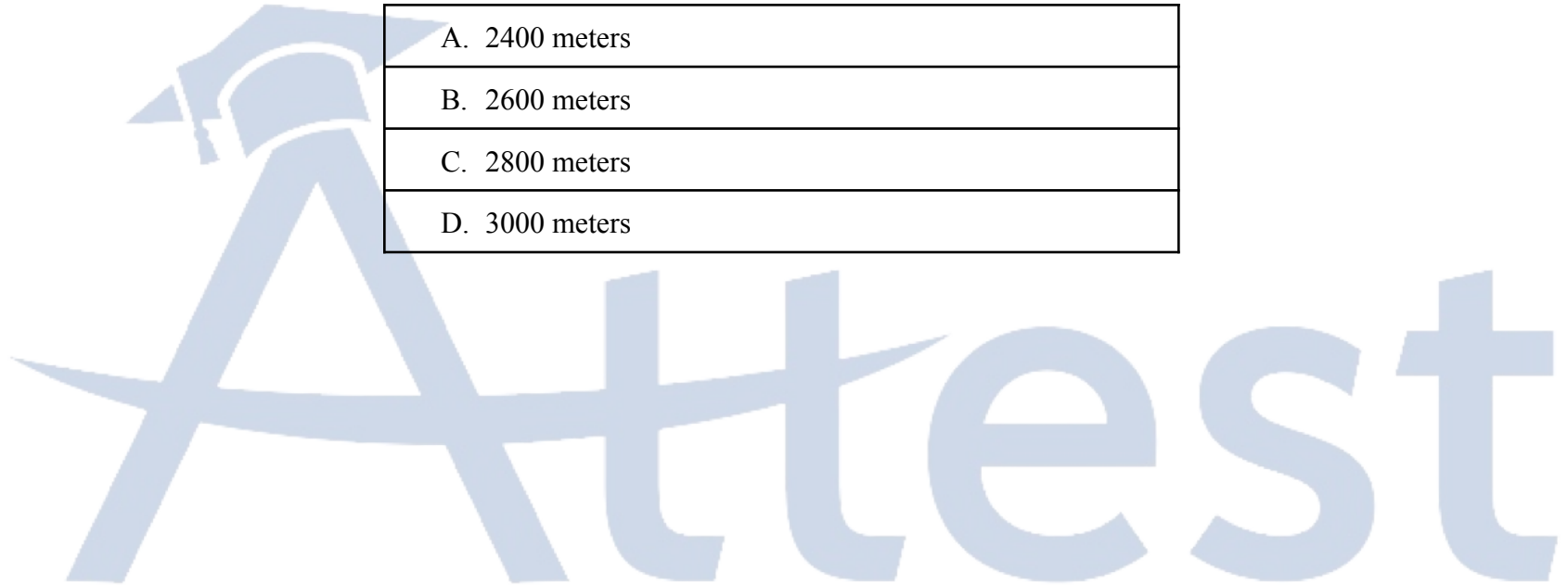
If Marquis jogs 100 meters in 28 seconds, then approximately how far is Marquis expected to run in 12 minutes?

A. 2400 meters

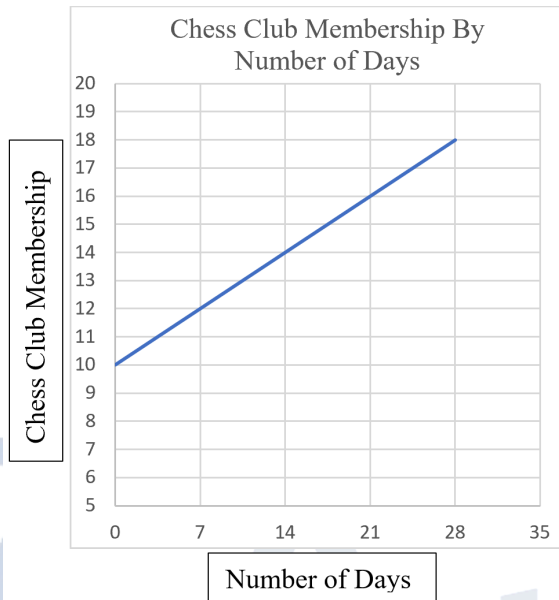
B. 2600 meters

C. 2800 meters

D. 3000 meters



Question 5 refers to the following information.



The chess club at Robinson High School is beginning a membership drive to recruit new members to join the club. The club meets every week and attendance is taken.

5

Which of the following is the equation for the data shown in the graph?

A. $y = 7x + 2$

B. $y = 2x + 7$

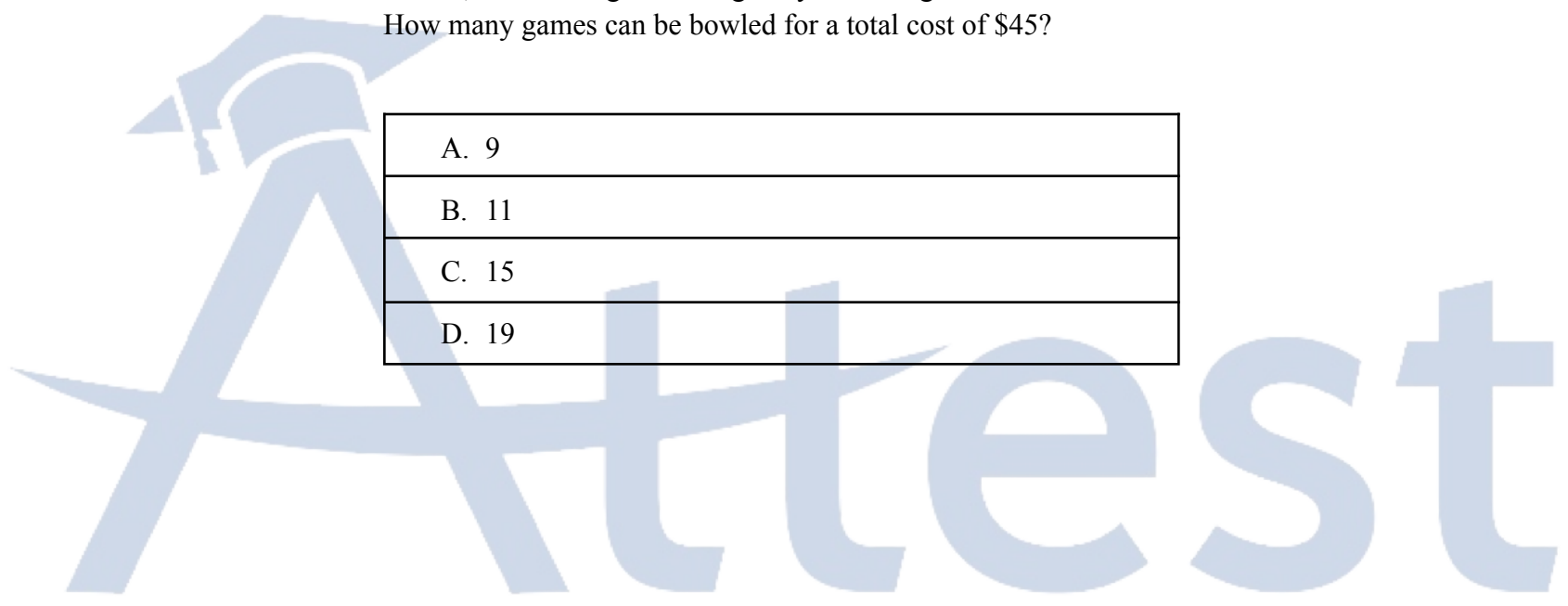
C. $y = \frac{2}{7}x + 10$

D. $y = \frac{7}{2}x + 10$

6

The function $g(x) = 12 + 3x$ represents the total cost, in dollars, of attending a bowling alley where x games are bowled. How many games can be bowled for a total cost of \$45?

A. 9
B. 11
C. 15
D. 19



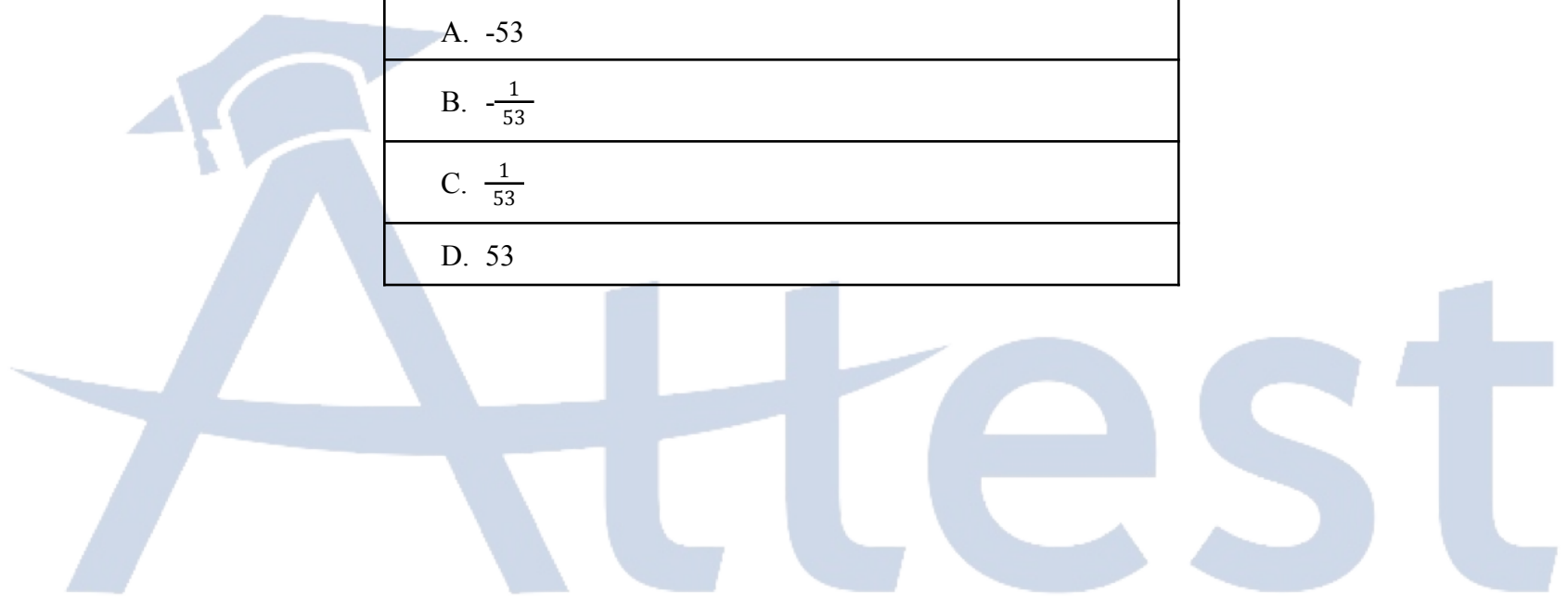
7

For the linear function $t(x) = mx + c$, c is a constant. When $x = 0$, $t(x) = 53$. What is the value of c ?

A. -53

B. $-\frac{1}{53}$ C. $\frac{1}{53}$

D. 53



8

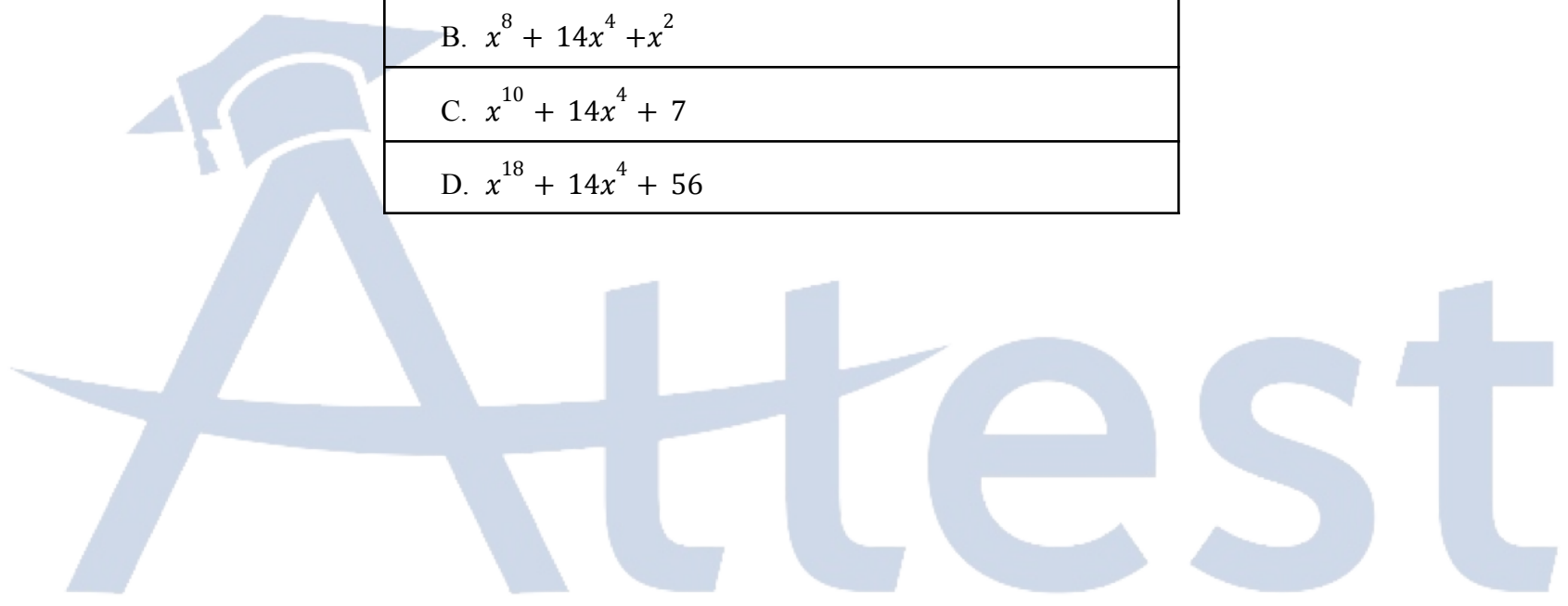
Which expression is equivalent to $(x^4 + 7)^2 + (x + 7)(x - 7)$

A. $x^4 + 14x^4 + 98$

B. $x^8 + 14x^4 + x^2$

C. $x^{10} + 14x^4 + 7$

D. $x^{18} + 14x^4 + 56$



9

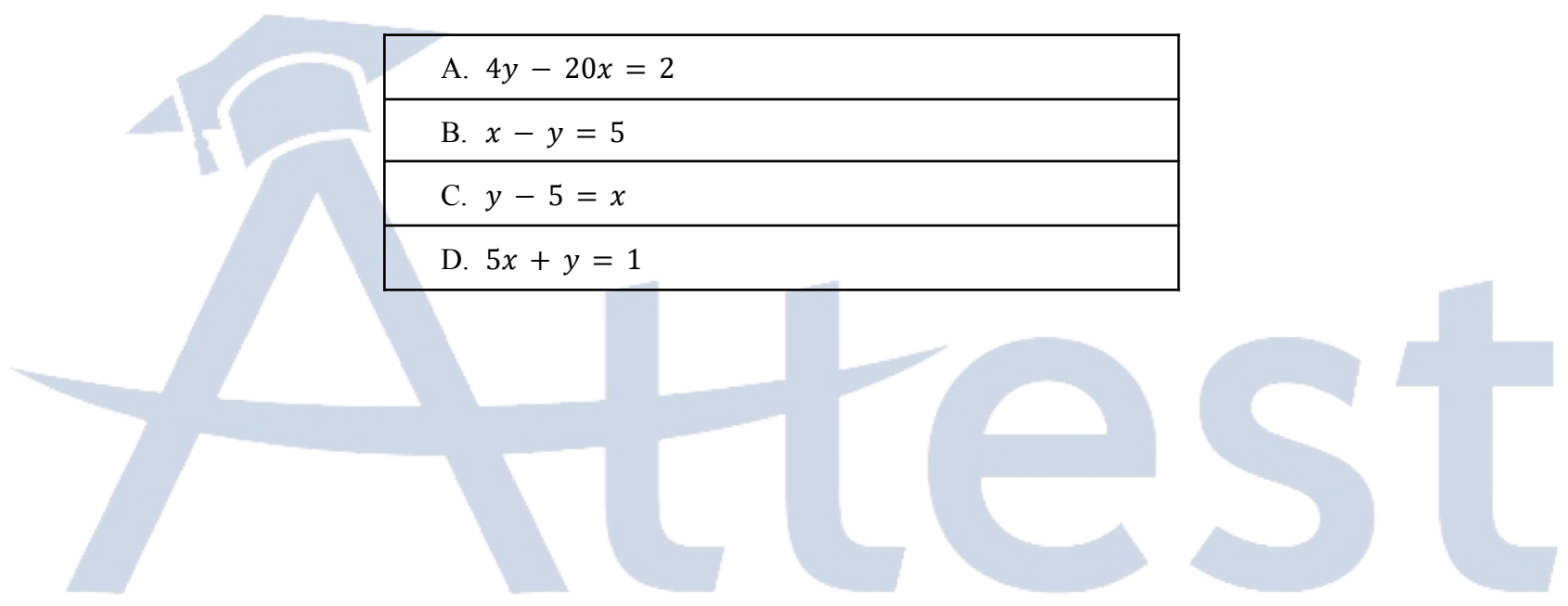
The graph of which of the following equations has a y-intercept of -5 and a slope of 1 ?

A. $4y - 20x = 2$

B. $x - y = 5$

C. $y - 5 = x$

D. $5x + y = 1$



10

$$a = \frac{7b+2c}{4}$$

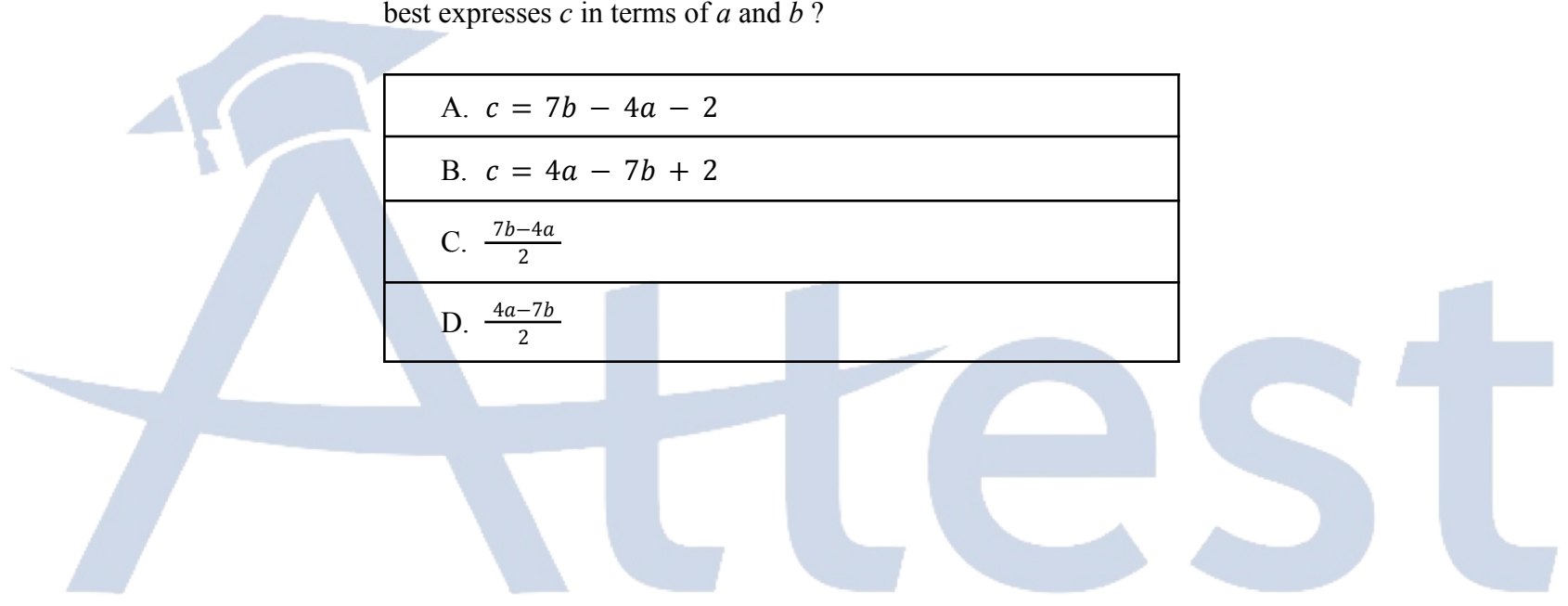
For the above algebraic expression, which of the following choices best expresses c in terms of a and b ?

A. $c = 7b - 4a - 2$

B. $c = 4a - 7b + 2$

C. $\frac{7b-4a}{2}$

D. $\frac{4a-7b}{2}$



11

If Jasmine earns scores of 87, 90, 95, and 78 on her first four history tests, what does she need to score on her fifth test in order to have a test average of 90 in the class?



Attest

12

$$x^2 - 11x + 24 = 0$$

What is one of the solutions to the given equation?



Attest

13

For $\frac{8x+32}{x^2+5x+4} = 4$, what is the value of x ?

A. 0

B. 1

C. 4

D. 8



Attest

14

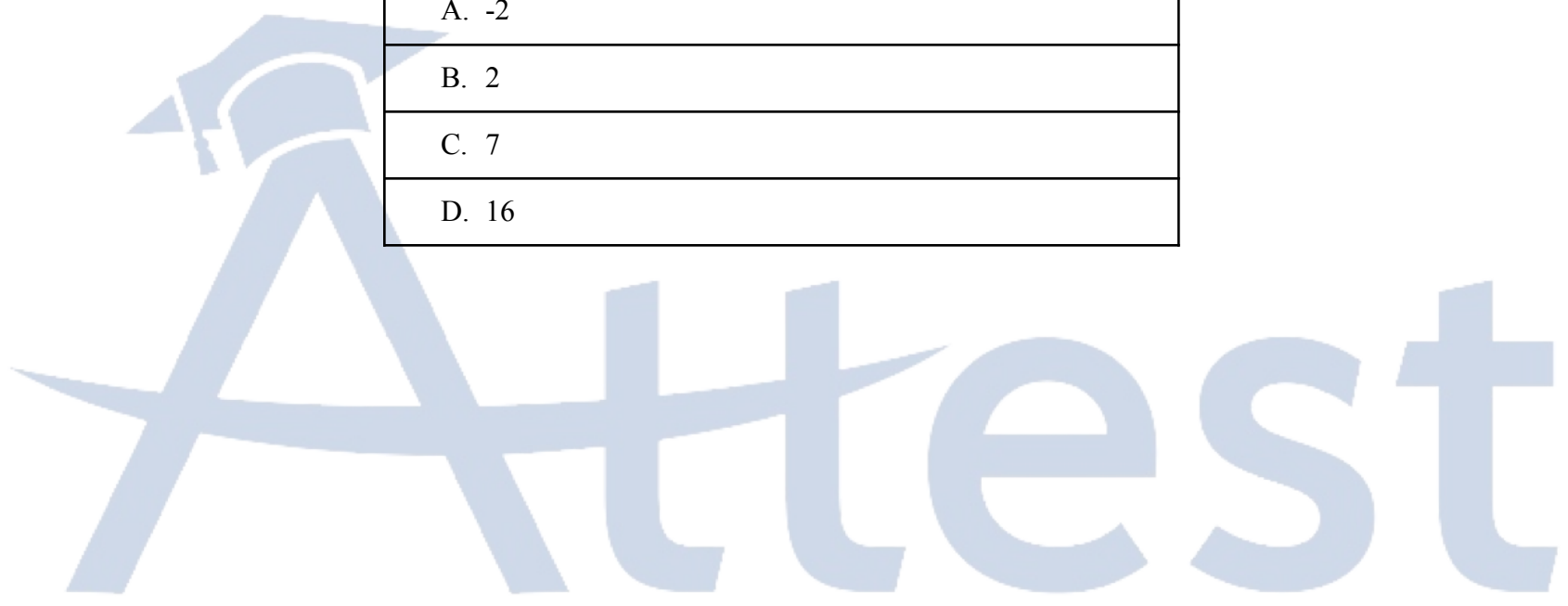
If $6x + 54 = 42$, then what is the value of $x + 9$?

A. -2

B. 2

C. 7

D. 16



15

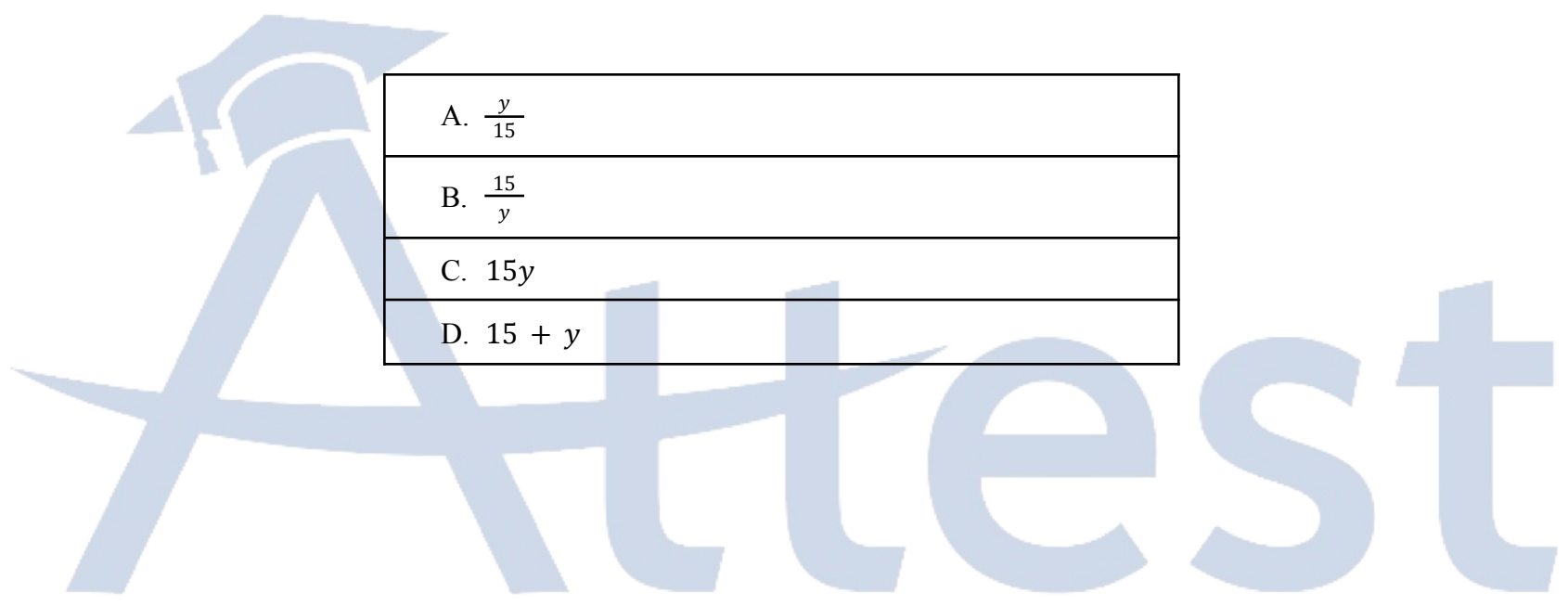
At a certain summer camp, the ratio of counselors to campers is 1 to 15. If there are y counselors at the camp, which of the following expressions represents the number of campers at the camp?

A. $\frac{y}{15}$

B. $\frac{15}{y}$

C. $15y$

D. $15 + y$



16

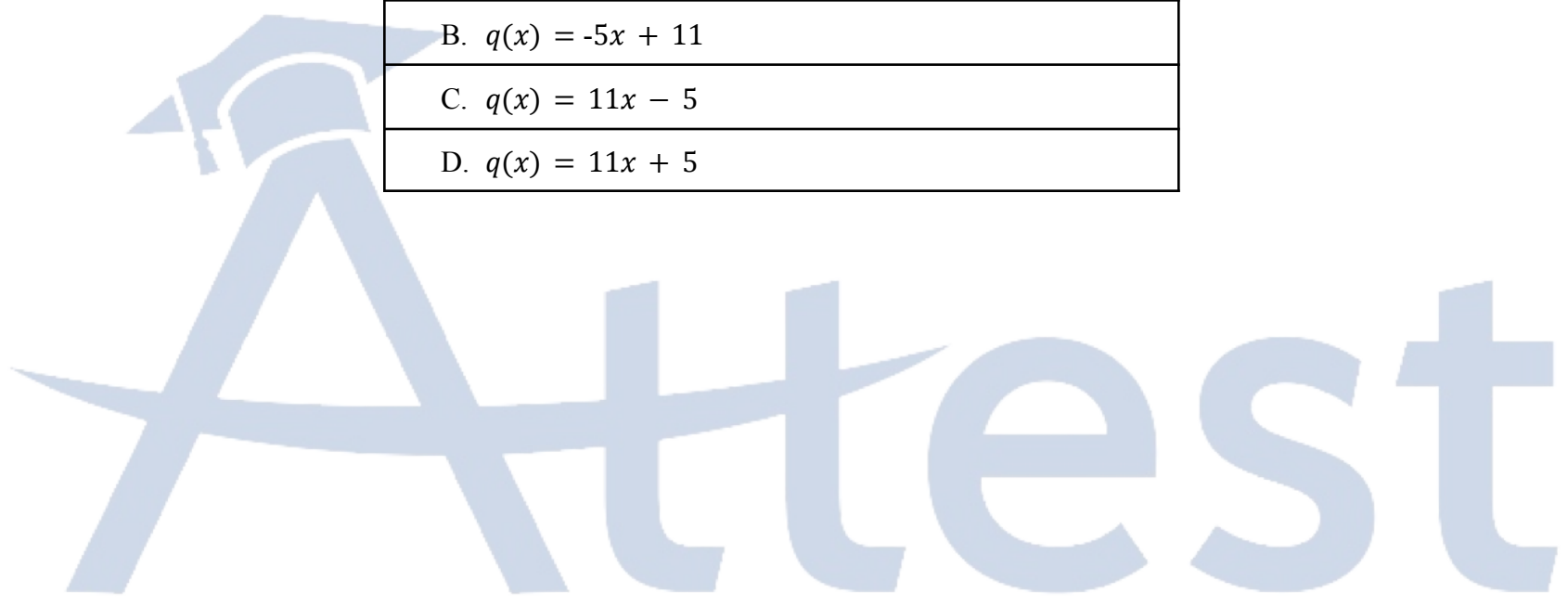
Line q in the xy -plane has a slope of -5 and passes through the point $(0,11)$. Which equation defines line q ?

A. $q(x) = -5x - 11$

B. $q(x) = -5x + 11$

C. $q(x) = 11x - 5$

D. $q(x) = 11x + 5$



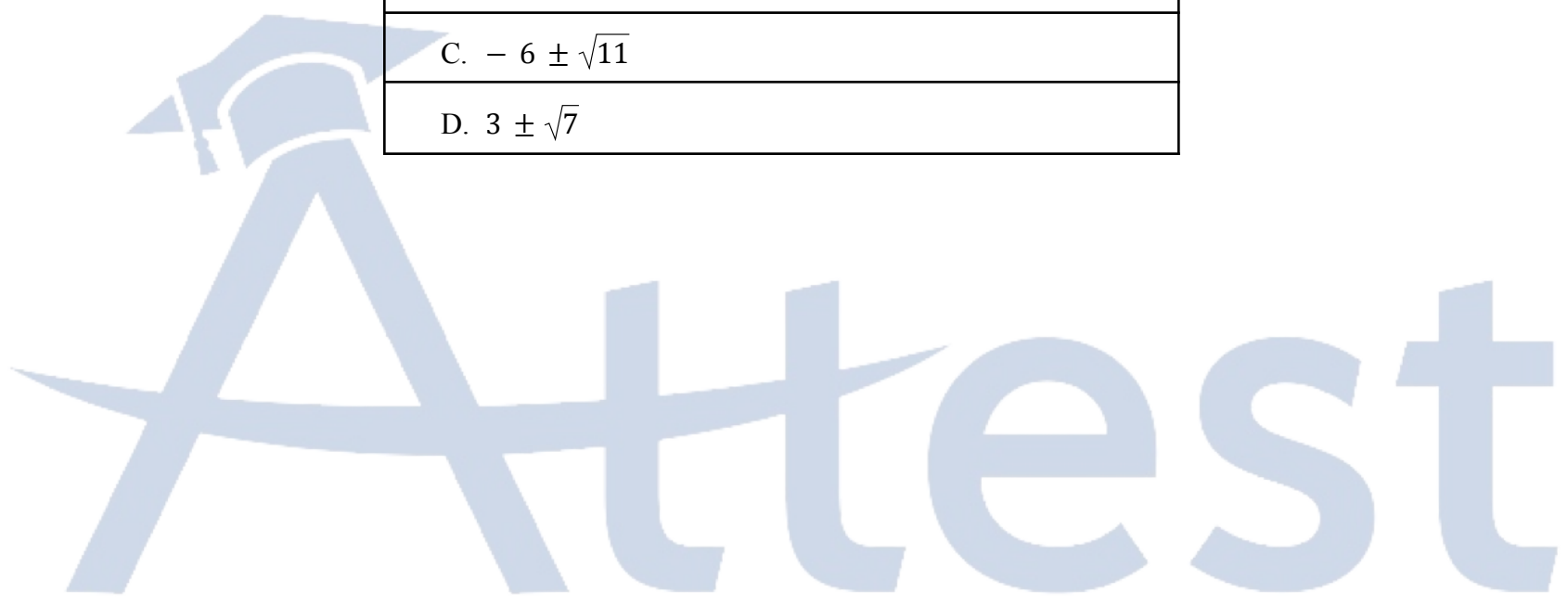
17What are the solutions to $4x^2 - 24x + 8 = 0$?

A. $-3 \pm \sqrt{7}$

B. $4 \pm \sqrt{11}$

C. $-6 \pm \sqrt{11}$

D. $3 \pm \sqrt{7}$



18

$$y = \frac{1}{7}(40x - 8) + 6x$$

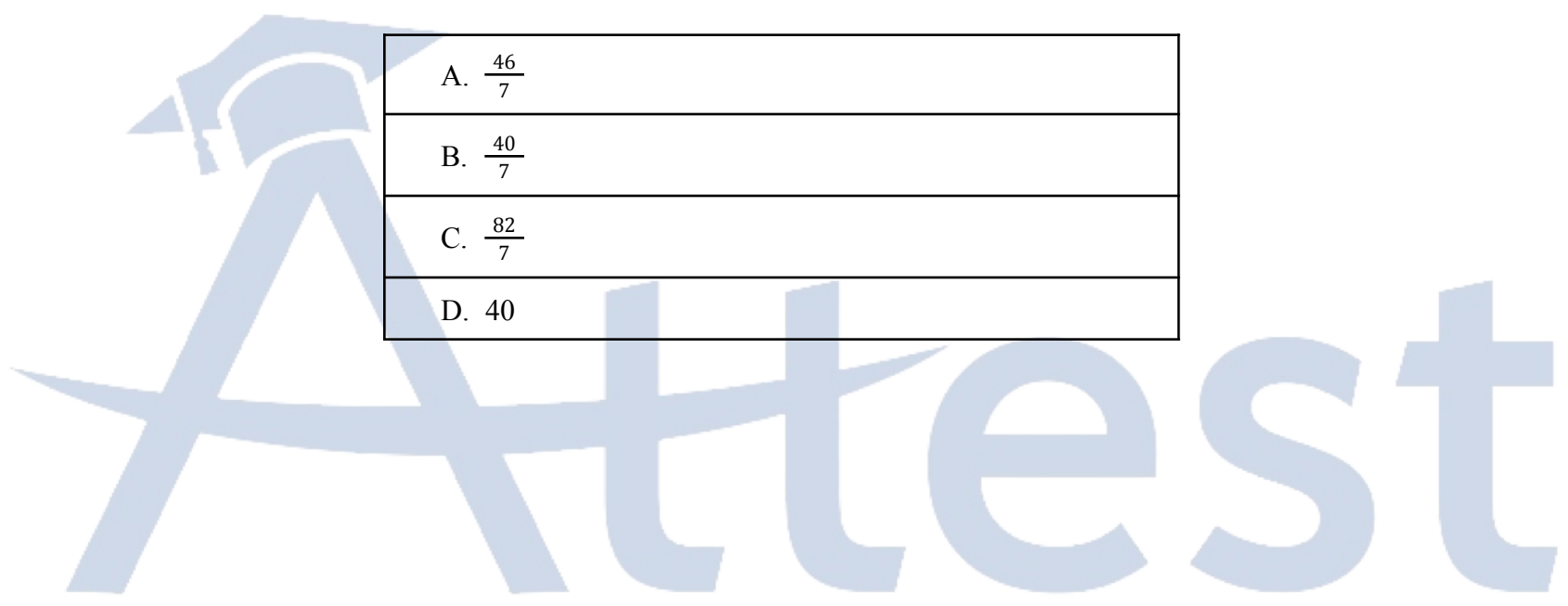
What is the slope for the above equation?

A. $\frac{46}{7}$

B. $\frac{40}{7}$

C. $\frac{82}{7}$

D. 40



$$\begin{aligned} -wx + 5y &= 40 \\ -60x + 3y &= 21 \end{aligned}$$

If w is a constant, for what value of w will the system of equations have no solution?



Attest

20

A line with the equation $y = c$ intersects the y -axis and a parabola with the equation $y = x^2 - 12x + 20$ at the same point. What is the value of c ?



Attest

21

Which of the following is equivalent to $r^{\frac{4}{9}} * \sqrt{r}$ for $r > 1$?

A. $r^{\frac{17}{18}}$

B. $r^{\frac{4}{18}}$

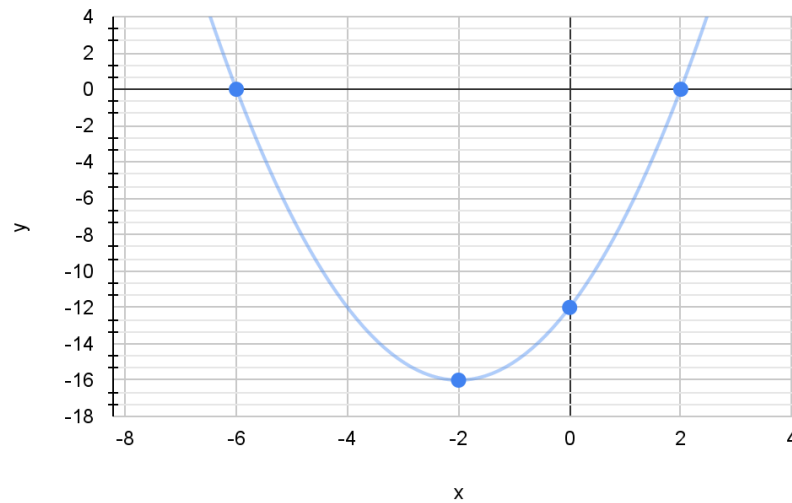
C. $r^{\frac{8}{9}}$

D. $r^{\frac{4}{9}}$



Attest

22



The graph above is for the equation $y = x^2 + bx - c$ where b and c are constants. What is the value of $\frac{c}{b}$?

- | |
|--------|
| A. -12 |
| B. -3 |
| C. 3 |
| D. 6 |

23

$$(rx + 2)(3x^2 - sx + 8) = 12x^3 - 22x^2 + 18x + 16$$

The equation above is true for all values of x , and r and s are constants. What is the value of $r + s$?

A. -18

B. 11

C. 18

D. 30

