

TEKS 7.4C: Use words and symbols to describe the relationship between the terms in an arithmetic sequence (with a constant rate of change) and their positions in the sequence

TEKS 7.5A: Use concrete and pictorial models to solve equations and use symbols to record the actions

1. Which sequence is described by the expression $5n + 2$, where n represents the term's position in the sequence?

- A 3, 7, 13, 18, 23, ...
- B 7, 12, 17, 22, 27, ...
- C 5, 10, 15, 20, 25, ...
- D 7, 9, 11, 13, 15, ...

2. Which sequence follows the rule $\frac{n}{6}$, in which n represents the position of a term in the sequence?

- A $\frac{1}{6}, \frac{1}{2}, 1, 1\frac{1}{6}, 1\frac{1}{2}, 2, \dots$
- B $\frac{1}{6}, \frac{5}{6}, 1\frac{1}{6}, 1\frac{5}{6}, 2\frac{1}{6}, 2\frac{5}{6}, \dots$
- C $\frac{1}{6}, \frac{5}{6}, 1, 1\frac{1}{6}, 1\frac{5}{6}, 2, \dots$
- D $\frac{1}{6}, \frac{1}{3}, \frac{1}{2}, \frac{2}{3}, \frac{5}{6}, 1, 1\frac{1}{6}, \dots$

Use the table below to answer questions 3 and 4.

Position	Value of Term
1	5
2	10
3	15
4	20
5	25
6	30
7	
8	
9	
n	

3. In the table above, n represents the term's position in the sequence. What is the value of the ninth term in the sequence?

- A 35
- B 40
- C 45
- D 60

4. In the table above, which expression can be used to find the value of the n th term in the sequence?

- A $n + 5$
- B $5n$
- C $n^2 - 6$
- D $2n + 5$

Use the table below to answer questions 5 and 6.

Position	Value of Term
1	7
2	11
3	15
4	19
5	
6	
n	

5. In the table above n represents the term's position in the sequence. What is the value of the sixth term in the sequence?
- A 19
 B 23
 C 27
 D 31
6. In the table above, which expression can be used to find the value of the n th term in the sequence?
- A $4n + 3$
 B $4n$
 C $5n - 1$
 D $n^2 + 3$

7. The table below shows the relationship between a term's position in the sequence and the term's value.

Position	Value of Term
1	2
2	5
3	8
4	11
5	14

Which expression could be used to find the value of the n th term in the sequence?

- A $2n$
 B $2n + 4$
 C $n^2 + 2$
 D $3n - 1$
8. Which description shows the relationship between a term and n , its position in the sequence?

Position of Term	1	2	3	4	5	n
Value of Term	1	5	9	13	17	

- A Add 4 to n
 B Multiply n by 3 and then subtract 4 from that product
 C Multiply n by 4 and then subtract 3 from that product
 D Multiply n by 4 and then add 3 to that product

9. Look at the following sequence of numbers.

4, 9, 14, 19, 24, ...

Which expression can be used to find the value of the n th term in the sequence?

- A $n^2 + 5$
- B $5n - 1$
- C $4n$
- D $6n - 4$

10. Which rule can be used to find the value of any term in the sequence below where n represents the position of the term?

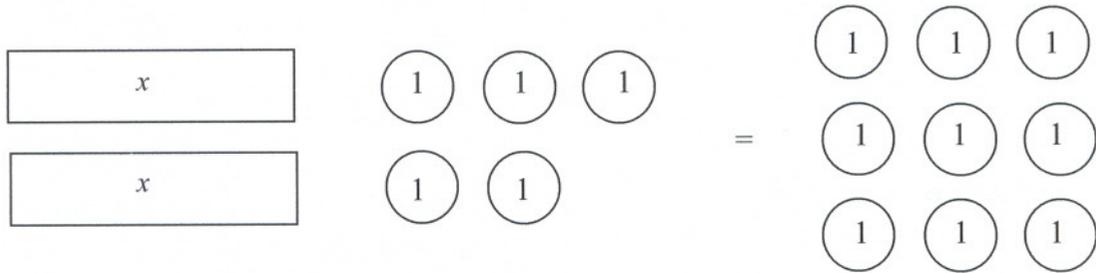
Position	Value of Term
1	6
2	9
3	12
4	15
5	18
n	

- A $3n + 3$
- B $5n - 7$
- C $2n + 4$
- D $4n + 2$

11. Which sequence follows the rule $\frac{3n}{2}$, where n represents the number's position in the sequence?

- A $1\frac{1}{2}, 3, 4\frac{1}{2}, 6, 7\frac{1}{2}, \dots$
- B $2, 2\frac{1}{2}, 3, 3\frac{1}{2}, 4, \dots$
- C $1, 4, 7, 10, 13, \dots$
- D $1\frac{1}{2}, 2, 2\frac{1}{2}, 3, 3\frac{1}{2}, \dots$

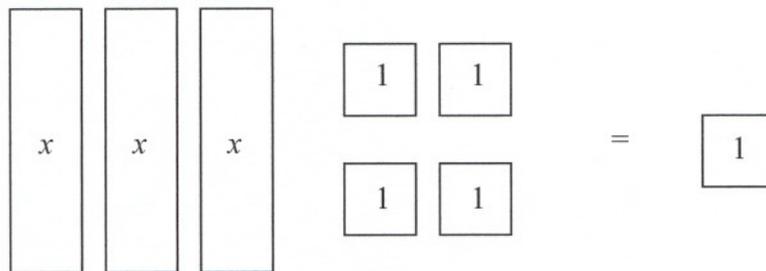
12. The model below represents the equation $2x + 5 = 9$.



What is the first step in finding the value of x ?

- A Add 5 circles to each side of the model
- B Add 9 circles to each side of the model
- C Divide the number of circles equally among the two rectangles
- D Subtract 5 circles from each side of the model

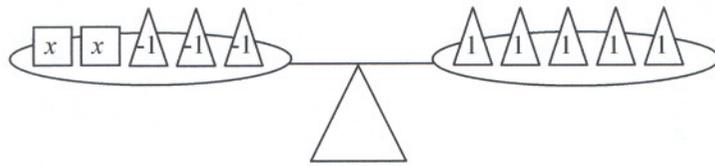
13. The model below represents the equation $3x + 4 = 1$.



What is the value of x ?

- A $x = -3$
- B $x = -1$
- C $x = \frac{5}{3}$
- D $x = 5$

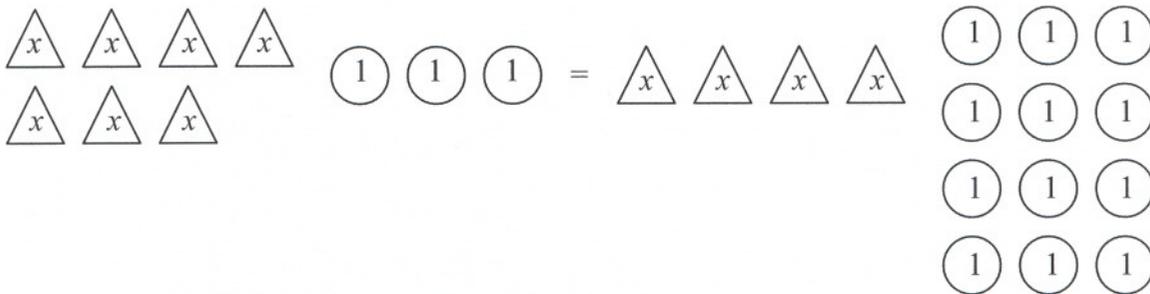
14. The model represents the equation $2x - 3 = 5$.



What value of x makes the equation true?

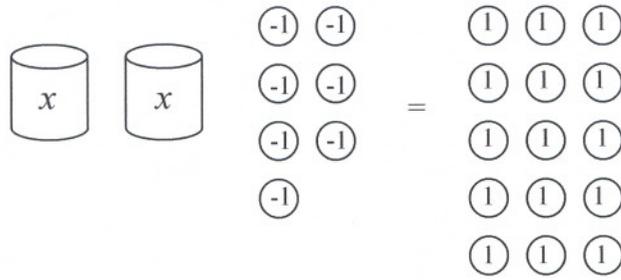
- A $x = 1$
- B $x = 2$
- C $x = 4$
- D $x = 8$

15. In the equation $7x + 3 = 4x + 12$ modeled below, find the value of x which makes the equation true.



- A 2
- B 3
- C 5
- D 9

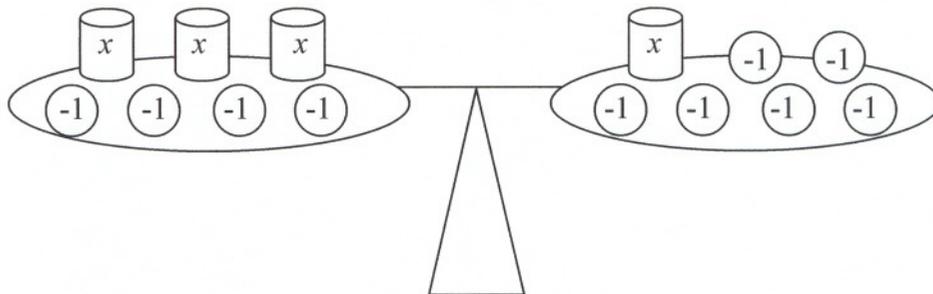
16. The model below represents the equation $2x - 7 = 15$.



What is the first step in finding the value of x ?

- A Add 15 circles to each side of the model
- B Subtract 7 circles from each side of the model
- C Add 7 circles to each side of the model
- D Divide the circles equally between the 2 cylinders

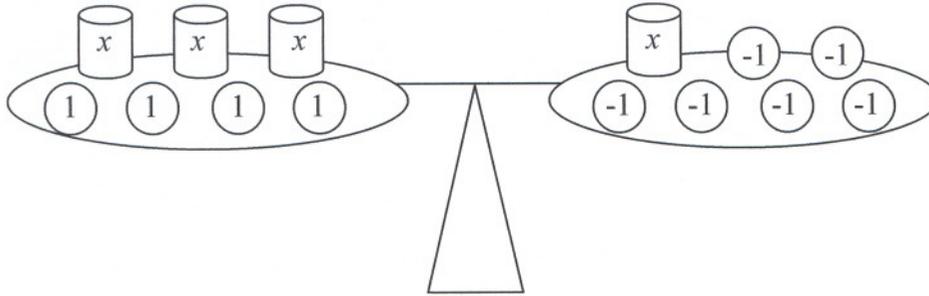
17. The model represents the equation $3x - 4 = x - 6$.



What value of x makes the equation true?

- A $x = -1$
- B $x = -2$
- C $x = -5$
- D $x = 2.5$

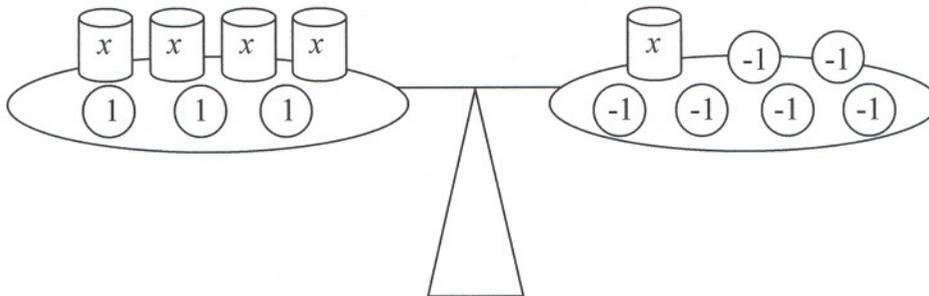
18. The model represents the equation $3x + 4 = x - 6$



What value of x makes the equation true?

- A $x = 2.5$
 - B $x = -2$
 - C $x = -1$
 - D $x = -5$
-

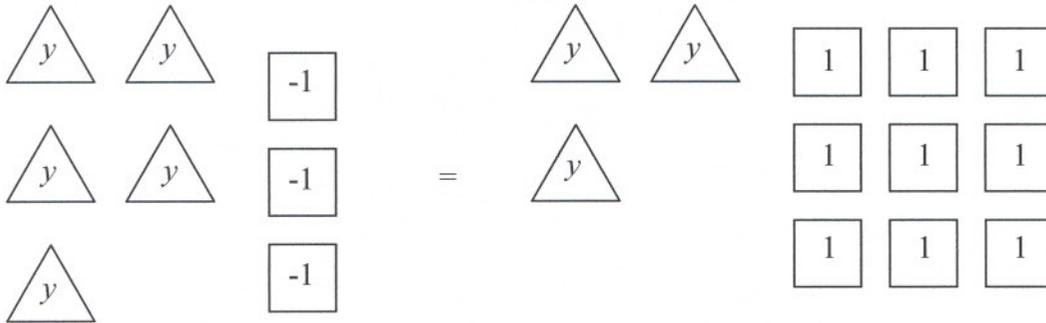
19. The model represents the equation $4x + 3 = x - 6$



What is the value of x ?

- A $x = 1$
- B $x = -3$
- C $x = -1$
- D $x = -1.8$

20. The model represents the equation $5y - 3 = 3y + 9$.



What value of y makes the equation true?

- A $y = 1.5$
- B $y = 3$
- C $y = 6$
- D $y = 12$