Lyth October

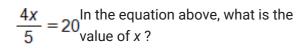
Completed Exercises from the lecture on

< Linear Equations in one variable >

- 1. Easy, Page 2-13;
- 2. Medium, Page 14-16;

Can be found below.

## ID: 6ac23de7



A. 25  
B. 24  
B. 24  
$$\frac{4x}{5} = \frac{4}{5} \cdot x = 20$$
  $x = \frac{5}{4}$ 

- C. 16
- D. 15

$$=\frac{4}{5}, \frac{5}{4} \times = 20, \frac{5}{4}$$

$$= x = 20 \cdot \frac{5}{4} = 25.$$

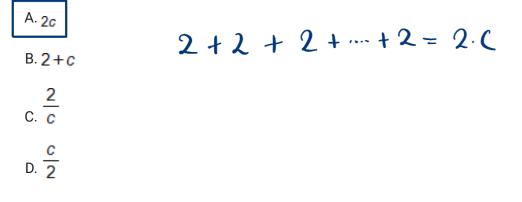
## ID: 7392dfc1

Which of the following is equivalent to 4x + 6 = 12?

- A. 2x + 4 = 6
- B. x + 3 = 3
- C. 3x + 2 = 4
- D. 2x + 3 = 6

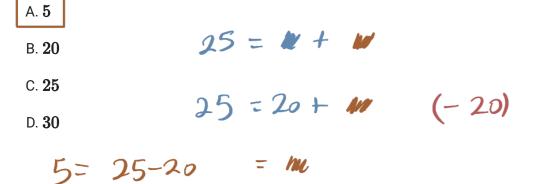
$$4x+6=12$$
  
 $2(2x+3)=12$  = 2 = 2x+3 = 6

One pound of grapes costs \$2. At this rate, how many dollars will *c* pounds of grapes cost?



#### ID: 3d04de9c

A principal used a total of 25 flags that were either blue or yellow for field day. The principal used 20 blue flags. How many yellow flags were used?



- x = 88 What value of x is the solution to the given equation? A. 11
- B. 80
- C. 96
- D. 704

#### ID: 550b352c

10 = 2x + 4

How many solutions exist to the equation shown above?

A. None

10 = 2x + 410 - 4 = 2x- 4

 $\times \frac{1}{2}$ 

C. Exactly 3

B. Exactly 1

D. Infinitely many

$$\frac{10-4}{2} = x$$

#### = h

Cathy has *n* CDs. Gerry has 3 more than twice the number of CDs that Cathy has. In terms of *n*, how many CDs does Gerry have?

2×

- A. 3n-2
- B. 3n+2
- cathy: n Gerry: 3+2·N C. 2n-3
- D. 2n+3

# ID: 9ff10b3b

If  $\frac{1}{2}x - \frac{1}{6}x = 1$ , what is the value of x?

A. **−4** 

<u>1</u> В. З

C. 3

D. 6

$$Q \cdot (b+c) = a \cdot b + a \cdot c$$

$$\frac{1}{2} \times -\frac{1}{6} \times = 1$$

$$\times (\frac{1}{2} - \frac{1}{6}) = 1$$

$$\times (\frac{3}{6} - \frac{1}{6}) = 1 = 1 \times \frac{1}{3} = 1 \quad .3$$

$$\Rightarrow x = 3$$

If 3x + 2 = 8, what is the value of 9x + 6?

$$3x+2=8$$
 (×3)

9x+6 = 24

### ID: 46f68129

A librarian has 43 books to distribute to a group of children. If he gives each child 2 books, he will have 7 books left over. How many children are in the group?

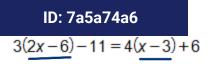
A. 15	B=43	
B. 18	2 · C	
C. 25		
D. 29	$43 - 2 \cdot C = 7$	-43
	4)-20-1	-4)
		1

$$-2 \cdot C = 7 - 43 \qquad \frac{1}{-2}$$
$$C = \frac{7 - 43}{-2} = 18$$

6x + k = 6x + 5

In the given equation, k is a constant. If the equation has infinitely many solutions, what is the value of k?

$$6x+K = 6x+5$$
  $-6x$   
 $K = 5$   
 $6x+5 = 6x+5$  is true  
for any  $X!$   
 $X=x$ 



If x is the solution to the equation above, what is the value of x - 3?

$$A = \frac{23}{2}$$

$$3(2x-6) - 11 = 4(x-3) + 6$$

$$B = \frac{17}{2}$$

$$6x - 18 - 11 = 4x - 12 + 6$$

$$-29 = 4x-6$$

$$(+29) (-4x)$$

$$2x = 6x - 4x = -6 + 29 = 23$$

$$x - 3 = \frac{23}{2} - \frac{6}{2} = \frac{17}{2}$$

$$A \text{ nother way:}$$

$$3(2x-6) - 11 = 4(x-3) + 6$$

$$5 \cdot (x-3) = -11 = 4(x-3) + 6$$

$$6 \cdot (x-3) - 11 = 4(x-3) + 6$$

$$(+11)$$

$$6 \cdot (x-3) = 4(x-3) + 17$$

$$[-4(x-3)]$$

$$(x-3) = 4(x-3) = 17$$

$$2(x-3) = 17$$

$$2(x-3) = 17$$

$$x - \frac{1}{2} = \frac{17}{2}$$

2n+6=14

A tree had a height of 6 feet when it was planted. The equation above can be used to find how many years *n* it took the tree to reach a height of 14 feet. Which of the following is the best interpretation of the number 2 in this context?

 $\mathbf{X}$ . The number of years it took the tree to double its height

B. The average number of feet that the tree grew per year

 $\mathbf{X}$  The height, in feet, of the tree when the tree was 1 year old

D. The average number of years it takes similar trees to grow 14 feet

6

2n+6=2y2.4+6=1y

n= 4

4 years, 14

8 ft in 4 yrs 2 ft in 1 yr 2x + 16 = a(x+8)

In the given equation, *a* is a constant. If the equation has infinitely many solutions, what is the value of *a*?

2x+26 = a(x+8)  $2 \cdot (x+8) = a(x+8)$ Choosing a = 2 gives a statement true for any x!