

## Answer on Question #62627 – Math – Algebra

### Question

Which ordered pair is the solution to the system?

$$x + 5y = -15$$

$$y = 15x + 1$$

- a.  $(-5, -2)(-5, -2)$
- b.  $(-10, -1)(-10, -1)$
- c.  $(-7, -0.4)(-7, -0.4)$
- d.  $(-8, -1.2)$

### Solution

Let's solve the system

$$x + 5y = -15$$

$$y = 15x + 1$$

Substituting  $y$  from the second equation of the system into the first one we get

$$x + 5(15x + 1) = -15$$

Open brackets and simplify

$$x + 75x + 5 = -15$$

$$76x = -20$$

Divide through by 76:

$$x = -\frac{20}{76} = -\frac{5}{19} \approx -0.26.$$

Plug this value of  $x$  into the second equation of the system:

$$y = 15 \cdot \left(-\frac{5}{19}\right) + 1 = -\frac{75}{19} + \frac{19}{19} = -\frac{56}{19} \approx -2.95.$$

Let's check the solution of the system.

Substituting the values of  $x$  and  $y$  into the system of equations we get

$$-\frac{5}{19} + 5 \cdot \left(-\frac{56}{19}\right) = -15$$

$$-\frac{56}{19} = 15 \cdot \left(-\frac{5}{19}\right) + 1$$

Then

$$\frac{-5 + 5 \cdot (-56)}{19} = -15$$

$$-\frac{56}{19} = \frac{-75 + 19}{19}$$

Finally get

$$\frac{-285}{19} = -15$$

$$-\frac{56}{19} = -\frac{56}{19}$$

which is true.

Therefore, indeed, the pair  $x = -\frac{5}{19}$ ,  $y = -\frac{56}{19}$  is the solution of the system of equations.

**ANSWER:** *None of the above*, because  $x = -\frac{5}{19} \approx -0.26$ ,  $y = -\frac{56}{19} \approx -2.95$ .