

Equations

1. $\frac{5x+25}{x+5} = ?$

- A. 2
- B. 3
- C. 4
- D. 5
- E. 10

2. If $\frac{x}{3} + \frac{1}{3} - 6 = \frac{2}{3}$, what is the value of x?

- A. $\frac{2}{3}$
- B. $1\frac{1}{3}$
- C. 6
- D. 3
- E. 19

3. If $3(x - \frac{1}{6}) + \frac{1}{2} = x(2 - 6)$, what is the value of x?

- A. 0
- B. 7
- C. $\frac{1}{7}$
- D. 3.6
- E. $\frac{143}{100}$

4. If $\frac{x-1}{2} = x(\frac{2}{3} + \frac{1}{2})$, what is the value of x?

- A. $2\frac{1}{2}$
- B. -0.6
- C. -3
- D. $-\frac{3}{4}$
- E. $-\frac{3}{2}$

5. If $8(5x - 2) + 16 = 40x$, what is the value of x ?

- A. $\frac{4}{5}$
- B. $-\frac{4}{5}$
- C. 2
- D. 0
- E. Cannot be determined

6. If $\frac{5(x-2)}{5} - 15x = 0$, what is the value of x ?

- A. $-\frac{1}{7}$
- B. 0
- C. $-\frac{1}{5}$
- D. 2
- E. $\frac{3}{5}$

7. If $\frac{3x-8}{5} = \frac{5x+8}{3}$, what is the value of x ?

- A. 4
- B. 2
- C. -2
- D. 12
- E. -4

8. If $\frac{1}{2}(x-6) = \frac{17}{2}$, what is the value of x ?

- A. 24
- B. 3
- C. 6
- D. $7\frac{1}{2}$
- E. 23

9. If $\frac{2}{3}x - 2 = 0$, what is the value of x ?

- A. 3

- B. 16
- C. 26
- D. 0
- E. $\frac{1}{7}$

10. If $\frac{16}{9}(x - \frac{2}{5}) = \frac{4}{3}$, what is the value of x?

- A. 9
- B. 0
- C. $\frac{19}{20}$
- D. $1\frac{3}{20}$
- E. 3

EQUATIONS ANSWERS

1. D

First simplify the numerator:

$5x+25=5(x+5)$. $(x+5)$ in the numerator and denominator cancel out, leaving 5.

2. E

Leave $\frac{x}{3}$ on the left side of the equation

and take everything else to the right. Solve the right side (the common denominator is

$$3): \frac{x}{3} = \frac{2}{3} - \frac{1}{3} + 6 = \frac{2-1+6*3}{3} = \frac{19}{3}.$$

Now, we have $\frac{x}{3} = \frac{19}{3}$ left. Multiply each side of the equation by 3, resulting in $x=19$.

3. A

Simplify each side: $3x - \frac{3}{6} + \frac{1}{2} = 2x - 6x$.

Now simplify further: $3x - \frac{1}{2} + \frac{1}{2} = -4x$.

$-\frac{1}{2} + \frac{1}{2} = 0$, resulting in $3x = -4x$, which in turn means that $3x+4x=0$, or $7x=0$. $x=0$.

4. D

Simplify the right side of the equation:

$$x\left(\frac{2}{3} + \frac{1}{2}\right) = x\left(\frac{2*2+1*3}{6}\right) = x\left(\frac{7}{6}\right) = \frac{7x}{6}.$$

Now $\frac{x-1}{2} = \frac{7x}{6}$ is left. Cross-multiply

each side by the denominator of the other side: $6(x-1)=2*7x$ and you have $6x-6=14x$. Take $14x$ to the left side and -6 to the right side: $6x-14x=6$, or $-8x=6$. Solve for x :

$$x = \frac{6}{-8} = -\frac{6}{8} = -\frac{3}{4}$$

5. E

Simplify the left side of the equation:

$8(5x-2)+16=40x-16+16=40x$. This results in $40x-40x=0$ or $40x=40x$. The x can be any number in this case and it is

impossible to determine. The correct answer is E.

6. A

Get rid of the denominator by canceling out 5 in the numerator and 5 in the denominator. New equation reads: $x-2-$

$$15x=-14x-2. -14x=2, \text{ or } x = \frac{2}{-14} = -\frac{1}{7}$$

7. E

First, get rid of the denominators by getting both sides to the common denominator (15): $3(3x-8)=5(5x+8)$. You get $9x-24=25x+40$. Now move all the parts with x to the left and all the numbers to the right: $9x-25x=40+24$. Or $-16x=64$. Solve

for x : $x = \frac{64}{-16}$. Reduce the right part by

$$16: \frac{64}{-16} = \frac{4}{-1} = -4, \text{ or } x=-4.$$

8. E

Simplify the equation by multiplying both sides by 2. You should get $x-6=17$, or $x=17+6=23$.

9. A

First move -2 to the right: $\frac{2}{3}x = 2$. Now

multiply each side by 3 to remove the denominator and you will get $2x=6$. If $2x=6$, then $x=6$ divided by 2; $x=3$.

10. D

Start off by dividing both parts by $\frac{16}{9}$ to get rid of denominators. The new equation

will look like this: $x - \frac{2}{5} = \frac{3}{4}$. The least

common denominator is 20.

$$x = \frac{3 \times 5 + 2 \times 4}{20}. \text{ Solve and } x = \frac{23}{20} = 1 \frac{3}{20}$$

$$\frac{8+15}{20} = \frac{23}{20} = 1 \frac{3}{20}.$$