University of South Australia

Algebra: Equation Problems - Practice Answers

Answer 1:

Find out if the following expressions are equations:

No.	Expression	Answer
1	$5 + 6 = 11$	Equation
2	$2 + 3 = 6$	Not a true equation
3	$x + y = z$	Equation
4	$25 + x < 9$	Inequality; not an equation
5	$5x + y = 33 - z$	Equation

Answer 2:

Find out the value of '*x*' from the equations:

1) $x + 6 = 11$; $x = 5$

2) $x + 2 = 27$; $x = 25$

3) $x + 6 = 75$; $x = 69$

4) $x - 4 = 11$; $x = 15$

5) $x - 62 = 10 - x$; $x = 36$

6) $x + \frac{5}{7} = 12$; $x = \frac{79}{7}$

7) $0.35 + x = 1.25$; $x = 0.90$

8) $0.25 + x = 3.12$; $x = 2.87$

9) $x + 6 = 25 - x$; $x = \frac{19}{2}$

10) $20 + x = 12.5 + x$; it is not a true equation. 20 added to x and 12.5 added to x cannot be equal.

Answer 3:

Find out the value of '*x*' from the equations:

1) $2x + 6 = 11x;$ $x = \frac{2}{3}$

2) $5x - 2 = 27 + \frac{x}{6};$ $x = 6$

3) $x + 6 = 12x$-3; $x = \frac{9}{11}$

4) $9x - 4 + 6x = 11;$ $x = 1$

5) $5x - 88 = 10x + x;$ $x = -\frac{44}{3}$

6) $\frac{x}{5} + 7 = 15;$ $x = 40$

7) $0.35x - 1.2 = 2.25;$ $x = 9.85$

8) $0.75x + 0.8x = 2.5;$ $x = 1.61$

9) $5x + 6 - 9x = 25;$ $x = -\frac{19}{4}$

10) $20 + x = 12.5x - 0.25x;$ $x = 1.77$

Answer 4:

Let's suppose, Jake's age= x

So, Alex's age = $2 \times x = 2x$

Now, from the question we get,

$2x + x = 18$

$3x = 18$

$\frac{3x}{3} = \frac{18}{3}$

$x = 6$

So, Jake is **6 years old**.

Answer 5:

We know profit is what we earn from sales take away the cost.

Sales – cost = profit

Now, from the question we get:

Cost = $5000

Desired Profit= $1000

Selling price for pens=$3

Let's suppose, number of pens to be sold = x

So, sales = $3 \times x = 3x$

Now,

$3x - 5000 = 1000$

$3x = 1000 + 5000$

$\frac{3x}{3} = \frac{6000}{3}$

$x = 2000$

So, Josh needs to sell **2000 pens** to make a $1000 profit.