



# Year 9 Mathematics Equations Practice Test 1

Name \_\_\_\_\_

1 State whether each of the following equations is linear

a)  $2x + 6 = x + 1$

b)  $x^2 - 5 = x$

c)  $\frac{1}{2} - \frac{1}{x} = \frac{x+2}{3}$

2 Write linear equations for each of the following statements, using  $x$  to represent the unknown. (Do not attempt to solve the equations.)

a When 6 is subtracted from a certain number, the result is 15.

b Three more than seven times a certain number is zero.

c When dividing a certain number by 2, the answer is 4 more than that certain number.

3 Solve each of the following linear equations.

a)  $x - 79 = 153$

b)  $x + 46 = 82$

c)  $6x = 102$

d)  $\frac{x}{7} = 19$

4 Solve each of the following linear equations.

a)  $4 + y = 2$

b)  $5y = 11$

5 Solve the following linear equations.

a)  $2y + 4 = 12$

b)  $-6 - 2x = 12$

6 Solve the following linear equations.

a)  $4 - x = 10$

b)  $-\frac{x}{4} = 11$

7 Solve the following linear equations.

a)  $\frac{x+1}{2} = 11$

b)  $\frac{7-x}{5} = -6.3$

8 Solve each of the following linear equations.

a)  $5y = 3y + 4$

b)  $7x + 5 = 2 - 4x$

9 Solve each of the following linear equations.

a)  $7(x - 5) = 28$

b)  $6(x + 3) = 7$



## Answers

- 1 a) Linear                      b) Not linear                      c) Not linear
- 2 a)  $x - 6 = 15$                       b)  $7x + 3 = 0$                       c)  $\frac{x}{2} = x + 4$
- 3 a)  $x = 232$                       b)  $x = 36$                       c)  $x = 17$                       d)  $x = 133$
- 4 a)  $y = -2$                       b)  $2\frac{1}{5}$
- 5 a)  $y = 4$                       b)  $x = -9$
- 6 a)  $x = -6$                       b)  $x = -44$
- 7 a)  $x = 21$                       b)  $x = 38.5$
- 8 a)  $y = 2$                       b)  $x = -\frac{3}{11}$
- 9 a)  $x = 9$                       b)  $x = -\frac{11}{6}$
- 10 The original number was 6
- 11 Elena's journey was 25 kilometres.
- 12 If Nathan travels 200 km over 3 days the cost will be the same.
- 13 a)  $x \leq 1$                       b)  $x < -\frac{1}{4}$                       c)  $x \geq 4$
- 14 a)  $m > 4$                       b)  $x \leq -15\frac{1}{2}$
- 15 a)  $x = \frac{y-m}{k}$                       b)  $x = \frac{6y+20}{7}$
- 16 a)  $d = \frac{g+3}{6}$                       b)  $v = at + u$