

Practice test - Linear equations

Multiple-choice questions

1 If $x + 4 = 9$, then x is equal to:

- A $\frac{9}{4}$
- B 4
- C 5
- D 49
- E 94

2 If $a - 7 = 22$, then a is equal to:

- A $\frac{22}{7}$
- B 7
- C 15
- D 29
- E 227

3 The solution to the equation $s - 10 = 54$ is:

- A $s = 4$
- B $s = \frac{54}{10}$
- C $s = 44$
- D $s = 64$
- E $s = 540$

6 The solution of $2x + 6 = 13$ is:

- A $x = 3.5$
- B $x = 5$
- C $x = 7$
- D $x = 9.5$
- E $x = 19$

7 The solution of $2(x - 4) = 20$ is:

- A 6
- B 12
- C 14
- D 16
- E 44

- 8 If $a = 6$ and $b = 7$ then $2a + 4b =$
- A 19
 - B 38
 - C 40
 - D 54
 - E 73
- 9 The expression $2x + 4y = 11$ can be arranged for y as:
- A $y = 11 - 2x$
 - B $y = 11 + 2x$
 - C $y = \frac{11 + 2x}{4}$
 - D $y = \frac{11 - 2x}{4}$
 - E $y = 7 - 2x$
- 10 The solution to $\frac{3(x+4)}{2} = 8$, correct to 2 decimal places, is:
- A -2.67
 - B 0
 - C 1.3
 - D 1.33
 - E 4
- 11 The solution to the simultaneous equations
- $$x + y = 7$$
- and $4x - 3y = 7$ is:
- A $x = 3, y = 4$
 - B $x = 3, y = -4$
 - C $x = 4, y = 3$
 - D $x = 1, y = 7$
 - E $x = 4, y = -3$

Extended-response questions

1 If $p = 3$, $q = -2$ and $r = 5$, find the value of:

a $pq + 2r$

b $p^2 - 4qr$

2 The formula to calculate the simple interest, I , is given by $I = \frac{PRT}{100}$ where P is the

Principal (amount) invested, R is the interest rate per annum (%) and T is the time in years.

Find:

a the interest earned if \$1000 is invested for 2 years at a rate of 3% per year.

b how long \$2000 needs to be invested at a rate of 12.5% per year to earn \$5000.

c what rate would be needed for an amount of \$2000 to earn \$100 in 6 months.

a)

b)

c)

3 John owns a Juice and Smoothie business. Last week, John bought 12 kg of bananas and 20 kg of apples for \$112. This week John paid \$86.50 for 10 kg of bananas and 15 kg of apples.

a Using b for the cost of one kg of bananas and a for the cost of one kg of apples, write down two linear equations that could be solved simultaneously.

b Find the cost of one kg of bananas.

c Find the cost of one kg of apples.

d Next week John intends to buy 9 kg of bananas and 18 kg of apples. How much will this cost?

a)

b)

c)

d)

4 At the hardware store, a packet of nails can be bought for \$5.60 and a packet of screws for \$2.80.

a Using a (packets of nails) and b (packets of screws) construct a formula to show the total cost, C , of packets of nails and packets of screws sold.

b John bought 6 packets of nails and 3 packets of screws. How much did it cost?

a)

b)

5 The sports store is having a sale of soccer and tennis balls. Soccer balls cost \$10 and cricket balls cost \$9.

a Using a (soccer balls) and b (cricket balls), write a formula showing the profit made, P , from the sale of soccer and cricket balls.

b The sports store sells 276 soccer balls and 193 cricket balls. What profit was made?

c A sports teacher buys 12 soccer balls and 5 cricket balls. How much will it cost?

a)

b)

c)
