

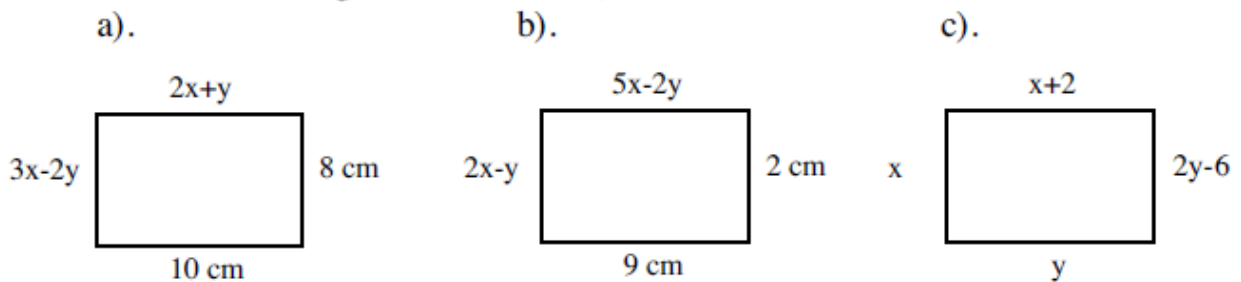
TBAT formulate and solve simultaneous linear equations

CORE

- Two numbers,  $x$  and  $y$ , have a sum of 53 and a difference of 11.
  - Write two equations in  $x$  and  $y$ .
  - Solve them to find the values of  $x$  and  $y$
- Two numbers,  $p$  and  $q$ , have a sum of 45 and a difference of 19.
  - Write two equations in  $p$  and  $q$ .
  - Solve them to find the values of  $p$  and  $q$ .
- John and Andrew have £3.40 between them. John has £1.20 more than Andrew. John has £ $u$  and Andrew £ $v$ .
  - Write two equations in  $u$  and  $v$ .
  - Solve them to find the values of  $u$  and  $v$ .
- In a toy box there are blue and green bricks only. Find the weight of each type of brick if 9 blue bricks and 6 green bricks weigh 324 g and 5 blue bricks and 4 green bricks weigh 200g.
- Bill sold 75 tickets for a Naked Season gig. He sold  $x$  £5 tickets and  $y$  £8 tickets. He collected £444. How many of each type of ticket did he sell?

EXTENSION

6. Find the value of  $x$  and  $y$  for each of these rectangles.



ANSWERS

- CORE
- 1 a)  $x + y = 53$ ,  $x - y = 11$   
 b) 32 and 21
- 2 a)  $p + q = 45$ ,  $p - q = 19$   
 b) 32 and 13
- 3 a) £1.10 and £1.30  
 b) 16 g and 6 = 30 g
- 4 a) 52 X £5 and 23 X £8  
 b) 52 X £5 and 23 X £8
- EXTENSION
- 1 a)  $x + y = 53$ ,  $x - y = 11$   
 2 a)  $p + q = 45$ ,  $p - q = 19$   
 3 a)  $u + v = 3.4$ ,  $u - v = -1.2$   
 4 a)  $9b + 6g = 324$  g,  $5b + 4g = 200$  g  
 5 a)  $x + y = 75$ ,  $5x + 8y = 444$

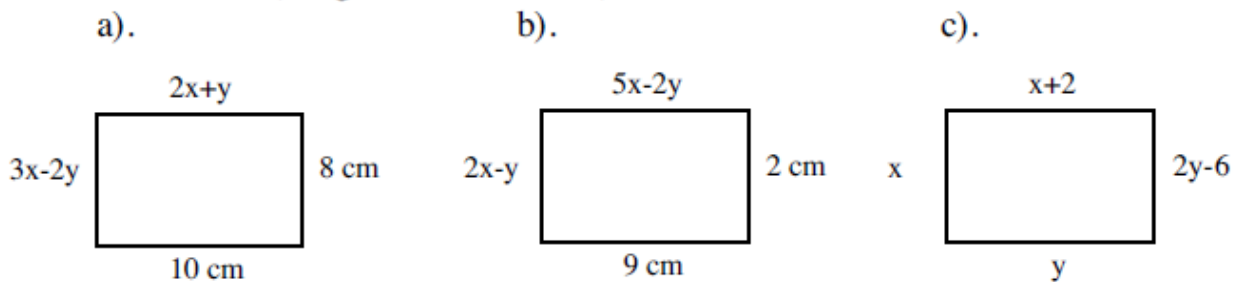
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ANSWERS

- CORE
- $x + y = 53$ ,  $x - y = 11$
  - $p + q = 45$ ,  $p - q = 19$
  - $u + v = 3.40$ ,  $u - v = 1.20$
  - $9b + 6g = 324$ ,  $5b + 4g = 200$
  - $x + y = 75$ ,  $5x + 8y = 444$
- EXTENSION
- $3x - 2y = 8$ ,  $2x + y = 10$ ,  $x = 4$  and  $y = 2$
  - $5x - 2y = 9$ ,  $2x - y = 2$ ,  $x = 5$  and  $y = 8$
  - $x - x + 2y = 6$ ,  $x - y = 2$ ,  $x = 2$  and  $y = 4$
- $b = 32$  and  $21$
  - $b = 32$  and  $13$
  - $b = £1.10$  and  $£1.30$
  - $b = 16$  g and  $6 = 30$  g
  - $b = 52$  X £5 and  $23$  X £8

TBAT formulate and solve simultaneous linear equations

CORE

For each question write down two equations in x and y and solve them.

1. The sum of two numbers is 21 and the difference is 7.
2. The sum of two numbers is 73 and the difference is 11.
3. Four knives and five forks cost £4.90 in total. Seven knives and three forks cost £5.70 in total. Let the cost of a knife be x and the cost of a fork be y.
4. Two bowler hats and three berets cost £55. Five bowler hats and two berets cost £88. Let the cost of the bowler hat be x and the cost of the beret be y.
5. Edward only has five pence and two pence coins in his pocket. He has ten coins all together and their total value is 41p. Let the number of five pence coins be x and the number of two pence coins be y.

EXTENSION

6. John and Andrew have £3.40 between them. John has £1.20 more than Andrew. John has £u and Andrew £v.
  - a) Write two equations in u and v.
  - b) Solve them to find the values of u and v.
7. In a toy box there are blue and green bricks only. Find the weight of each type of brick if 9 blue bricks and 6 green bricks weigh 324 g and 5 blue bricks and 4 green bricks weigh 200g.
8. Bill sold 75 tickets for a Naked Season gig. He sold x £5 tickets and y £8 tickets. He collected £444. How many of each type of ticket did he sell?

ANSWERS

CORE

1.  $x + y = 21, x - y = 7, 14 \text{ and } 7$

2.  $x + y = 73, x - y = 11, 31 \text{ and } 42$

3.  $4x + 5y = 4.9, 7x + 3y = 5.7, \text{Knives are } 60p \text{ and Forks are } 50p$

4.  $2x + 3y = 55, 5x + 2y = 88, \text{Bowler hats are } £14 \text{ and Berets are } £9$

5.  $x + y = 10, 5x + 2y = 41, 7x + 5y = 3 \text{ and } 2p$

EXTENSION

6. a)  $u + v = 3.4, -u + v = -1.2$   
 b)  $£1.10 \text{ and } £1.30$

7. a)  $9b + 6g = 324 \text{ g, } 5b + 4g = 200 \text{ g}$   
 b)  $B = 16 \text{ g and } G = 30 \text{ g}$

8. a)  $x + y = 75, 5x + 8y = 444$   
 b)  $52 \text{ X } £5 \text{ and } 23 \text{ X } £8$

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TBAT formulate and solve simultaneous linear equations

CORE

- The sum of two numbers is 21 and the difference is 7.
- The sum of two numbers is 73 and the difference is 11.
- 5 pillows and 3 quilts cost £45. 8 pillows and 3 quilts cost £63.  
Find the cost of 1 each.
- 3 apple pies and 2 banoffee cost £12. 3 apple pies and 5 banoffee cost £21.  
Find the cost of 1 each.
- 7 mugs and 4 plates cost £56. 5 mugs and 4 plates cost £48.  
Find the cost of 1 each.

EXTENSION

- Four knives and five forks cost £4.90 in total. Seven knives and three forks cost £5.70 in total. Let the cost of a knife be  $x$  and the cost of a fork be  $y$ .
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3.  $5p + 3q = 45, 8p + 3q = 63, p = £6$  and  $q = £5$

4.  $3a + 2b = 12, 3a + 5b = 21, a = £2$  and  $b = £3$

5.  $7m + 4p = 56, 5m + 4p = 48, m = £2$  and  $p = £10.50$

EXTENSION

6.  $4x + 5y = 4.9, 7x + 3y = 5.7$ , Knives are 60p and Forks are 50p

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