SQA Past paper questions

2024 - Paper 1 - Question 7

Solve, algebraically, the system of equations

$$2p-7r=11$$
$$3p+2r=4$$

3

Click here for video solution.

2023 - Paper 1 - Question 3

Solve, algebraically, the system of equations

$$2x+3y=8$$
$$5x+2y=-2.$$

3

Click here for video solution.

2022 - Paper 2 - Question 4

Moira buys 4 mangoes and 3 apples at a fruit shop.
The total cost is £4.25.

(a) Write down an equation to illustrate this information. 1

Sami buys 5 mangoes and 2 apples in the same fruit shop.
The total cost is £4.70.

(b) Write down an equation to illustrate this information. 1

(c) Calculate, algebraically, the cost of a mango and the cost of an apple. 4

Click here for video solution.

2021 - Paper 1 - Question 7

Solve, algebraically, the system of equations

$$5c + 2d = 4$$
$$4c - 3d = 17$$

3

Click here for video solution.

2019 - Paper 1 - Question 8

John bought 7 bags of cement and 3 bags of gravel.
The total weight of these bags was 215 kilograms.

(a) Write down an equation to illustrate this information.

1

Shona bought 5 bags of cement and 4 bags of gravel.
The total weight of her bags was 200 kilograms.

(b) Write down an equation to illustrate this information.

1

(c) Calculate the weight of one bag of cement and the weight of one bag of gravel.

4

Click here for video solution.

2018 - Paper 1 - Question 3

Solve, algebraically, the system of equations

$$4x + 5y = -3$$
$$6x - 2y = 5.$$

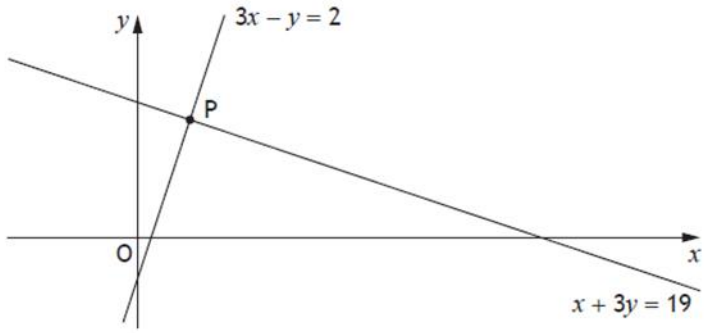
3

Click here for video solution.

2017 – Paper 1 - Question 13

The graph below shows two straight lines with the equations:

- $3x - y = 2$
- $x + 3y = 19$



The lines intersect at the point P.

Find, algebraically, the coordinates of P. 3

Click here for video solution.

2016 – Paper 1 - Question 4

Charlie is making costumes for a school show. One day he made 2 cloaks and 3 dresses.

The total amount of material he used was 9·6 square metres.

(a) Write down an equation to illustrate this information. 1

(b) The following day Charlie made 3 cloaks and 4 dresses.
The total amount of material he used was 13·3 square metres.
Write down an equation to illustrate this information. 1

(c) Calculate the amount of material required to make one cloak and the amount of material required to make one dress. 4

Click here for video solution.

2015 – Paper 1 - Question 11

Solve algebraically the system of equations

$$3x + 2y = 17$$
$$2x + 5y = 4.$$

3

Click here for video solution.

2014 – Paper 2 - Question 3

Two groups of people go to a theatre. Bill buys tickets for 5 adults and 3 children. The total cost of his tickets is £158·25.

(a) Write down an equation to illustrate this information. 1

(b) Ben buys tickets for 3 adults and 2 children.
The total cost of his tickets is £98.
Write down an equation to illustrate this information. 1

(c) Calculate the cost of a ticket for an adult and the cost of a ticket for a child. 4

Click here for video solution.

Specimen - Paper 1 - Question 10

Brian and Bob visit a ski resort. Brian buys 3 full passes and 4 restricted passes. The total cost of his passes is £185.

(a) Write down an equation to illustrate this information. 1

(b) Bob buys 2 full passes and 3 restricted passes.
The total cost of his passes is £130.
Write down an equation to illustrate this information. 1

(c) Find the cost of a restricted pass and the cost of a full pass. 3

Click here for video solution.

2013 - Paper 1 - Question 4

Solve algebraically the system of equations

$$2x - y = 10$$
$$4x + 5y = 6.$$ 3

Click here for video solution.

2012 - Paper 2 - Question 6

Three groups are booking a holiday. The first group consists of 6 adults and 2 children. The total cost of their holiday is £3148.

Let x pounds be the cost for an adult and y pounds be the cost for a child.

(*a*) Write down an equation in x and y which satisfies the above information. **1**

The second group books the same holiday for 5 adults and 3 children. The total cost of their holiday is £3022.

(*b*) Write down a second equation in x and y which satisfies this information.. **1**

(*c*) The third group books the same holiday for 2 adults and 4 children. The travel agent calculates that the total cost is £2056.

Has this group been overcharged?

Justify your answer. **4**

Click here for video solution.

2011 - Paper 2 - Question 7

Alan is taking part in a quiz. He is awarded x points for each correct answer and y points for each wrong answer. During the quiz, Alan gets 24 questions correct and 6 wrong. He scores 60 points.

(*a*) Write down an equation in x and y which satisfies the above condition. **1**

Helen also takes part in the quiz. She gets 20 questions correct and 10 wrong. She scores 40 points.

(*b*) Write down a second equation in x and y which satisfies this condition. **1**

(*c*) Calculate the score for David who gets 17 correct and 13 wrong. **4**

Click here for video solution.

2010 - Paper 2 - Question 5

Solve algebraically the system of equations

$$2x - 5y = 24$$
$$7x + 8y = 33.$$

3

Click here for video solution.

2009 - Paper 2 - Question 4

There are 14 cars and 60 passengers on the morning crossing of the ferry from Wemyss Bay to Rothesay. The total takings are £344·30.

(*a*) Let x pounds be the cost for a car and y pounds be the cost for a passenger.
Write down an equation in x and y which satisfies the above condition. **1**

(*b*) There are 21 cars and 40 passengers on the evening crossing of the ferry. The total takings are £368·95.
Write down a second equation in x and y which satisfies this condition. **1**

(*c*) Find the cost for a car and the cost for a passenger on the ferry. **4**

Click here for video solution.

2008 - Paper 2 - Question 4

Suzie has a new mobile phone. She is charged x pence per minute for calls and y pence for each text she sends. During the first month her calls last a total of 280 minutes and she sends 70 texts. Her bill is £52·50.

(*a*) Write down an equation in x and y which satisfies the above condition. **1**

The next month she reduces her bill. She restricts her calls to 210 minutes and sends 40 texts. Her bill is £38·00.

(*b*) Write down a second equation in x and y which satisfies this condition. **1**

(*c*) Calculate the price per minute for a call and the price for each text sent. **4**

Click here for video solution.

2007 - Paper 2 - Question 4

Find the point of intersection of the straight lines with equations $x + 2y = -5$ and $3x - y = 13$. **4**

Click here for video solution.

2006 - Paper 2 - Question 2

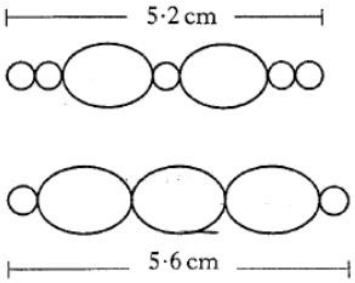
Solve algebraically the system of equations

$$4x + 2y = 13$$
$$5x + 3y = 17.$$ 3

Click here for video solution.

2005 - Paper 2 - Question 4

A jeweller uses two different arrangements of beads and pearls.



The first arrangement consists of 2 beads and 5 pearls and has an overall length of 5·2 centimetres.

The second arrangement consists of 3 beads and 2 pearls and has an overall length of 5·6 centimetres.

Find the length of **one** bead and the length of **one** pearl. 6

Click here for video solution.

2004 - Paper 2 - Question 5

A sports centre charges different entrance fees for adults and children.

(*a*) One evening 14 adults and 4 children visited the sports centre. The total collected in entrance fees was £55·00.

Let £x be the adult's entrance fee and £y be the child's entrance fee.

Write down an equation in x and y which represents the above condition. 1

(*b*) The following evening 13 adults and 6 children visited the sports centre. The total collected in entrance fees was £54·50.

Write down a second equation in x and y which represents the above condition. 1

(*c*) Calculate the entrance fee for an adult and the entrance fee for a child. 4

Click here for video solution.

2003 - Paper 2 - Question 3

Seats on flights from London to Edinburgh are sold at two prices, £30 and £50.
On one flight a total of 130 seats was sold.
Let x be the number of seats sold at £30 and y be the number of seats sold at £50.

(*a*) Write down an equation in x and y which satisfies the above condition. **1**

The sale of the seats on this flight totalled £6000.

(*b*) Write down a second equation in x and y which satisfies this condition. **1**

(*c*) How many seats were sold at each price? **4**

Click here for video solution.

2002 - Paper 2 - Question 2

Solve **algebraically** the system of equations

$$3x - 2y = 11$$
$$2x + 5y = 1.$$

3

Click here for video solution.

2000 - Paper 2 - Question 5

The cost of hiring a car depends on the number of days the car is hired and the number of litres of petrol used.

(*a*) David hired a car for 3 days and used 50 litres of petrol. The total cost was £88·50.
Let x pounds be the cost per day of hiring a car, and y pounds be the cost of one litre of petrol.
Write down an equation in x and y which satisfies the above condition. **1**

(*b*) Anne hired the same model of car for 4 days and used 60 litres of petrol. The total cost was £113·00.
Write down a second equation in x and y which satisfies this condition. **1**

(*c*) Find the cost per day of hiring the car and the cost of one litre of petrol. **4**

Click here for video solution.