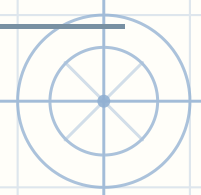


Shopping puzzles — Totals to 120c

Name: _____

Date: _____



Find how many of each. Show the trials that failed.

- 1 A market stall charges 13c for apples and 8c for plums. A basket of both came to exactly 107c.

How many apples, and how many plums, were in the basket?

Why Every plum costs 8c, so whatever is left after the apples has to divide by 8 exactly. Try each number of apples in turn: $2 \times 13 = 26$, leaving 81, and $81 \div 8$ is not whole; $3 \times 13 = 39$, leaving 68, and $68 \div 8$ is not whole; $4 \times 13 = 52$, leaving 55, and $55 \div 8$ is not whole; $5 \times 13 = 65$, leaving 42, and $42 \div 8$ is not whole; $6 \times 13 = 78$, leaving 29, and $29 \div 8$ is not whole; $7 \times 13 = 91$, leaving 16, and $16 \div 8 = 2$. So 7 apples and 2 plums.

7 and 2

- 2 Badges cost 7c and stickers cost 5c at the school fair. Sam spent all 55c of his money on both.

How many badges, and how many stickers, did he buy?

Why

.....
.....
.....

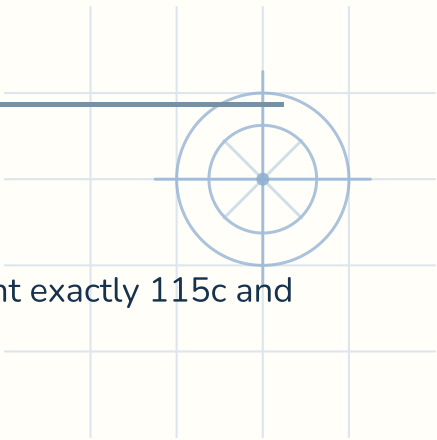
___ and ___



Shopping puzzles — Totals to 120c

Name: _____

Date: _____



Find how many of each. Show the trials that failed.

3

A shop sells pens at 12c each and erasers at 5c each. Mia spent exactly 115c and bought some of both.

How many pens, and how many erasers, did she buy?

Why

_____ and _____

4

Kites are 11c each and ribbons are 7c each. A club spent exactly 90c and took some of each.

How many kites, and how many ribbons, did they take?

Why

_____ and _____



Shopping puzzles · Totals to 120c — Answer key

If they are stuck

- You cannot buy part of one. What does that let you test, one number at a time?



1. Every plum costs 8c, so whatever is left after the apples has to divide by 8 exactly. Try each number of apples in turn: $2 \times 13 = 26$, leaving 81, and $81 \div 8$ is not whole; $3 \times 13 = 39$, leaving 68, and $68 \div 8$ is not whole; $4 \times 13 = 52$, leaving 55, and $55 \div 8$ is not whole; $5 \times 13 = 65$, leaving 42, and $42 \div 8$ is not whole; $6 \times 13 = 78$, leaving 29, and $29 \div 8$ is not whole; $7 \times 13 = 91$, leaving 16, and $16 \div 8 = 2$. So 7 apples and 2 plums.

3. Every eraser costs 5c, so whatever is left after the pens has to divide by 5 exactly. Try each number of pens in turn: $2 \times 12 = 24$, leaving 91, and $91 \div 5$ is not whole; $3 \times 12 = 36$, leaving 79, and $79 \div 5$ is not whole; $4 \times 12 = 48$, leaving 67, and $67 \div 5$ is not whole; $5 \times 12 = 60$, leaving 55, and $55 \div 5 = 11$. So 5 pens and 11 erasers.

2. Every sticker costs 5c, so whatever is left after the badges has to divide by 5 exactly. Try each number of badges in turn: $2 \times 7 = 14$, leaving 41, and $41 \div 5$ is not whole; $3 \times 7 = 21$, leaving 34, and $34 \div 5$ is not whole; $4 \times 7 = 28$, leaving 27, and $27 \div 5$ is not whole; $5 \times 7 = 35$, leaving 20, and $20 \div 5 = 4$. So 5 badges and 4 stickers.

4. Every ribbon costs 7c, so whatever is left after the kites has to divide by 7 exactly. Try each number of kites in turn: $2 \times 11 = 22$, leaving 68, and $68 \div 7$ is not whole; $3 \times 11 = 33$, leaving 57, and $57 \div 7$ is not whole; $4 \times 11 = 44$, leaving 46, and $46 \div 7$ is not whole; $5 \times 11 = 55$, leaving 35, and $35 \div 7 = 5$. So 5 kites and 5 ribbons.