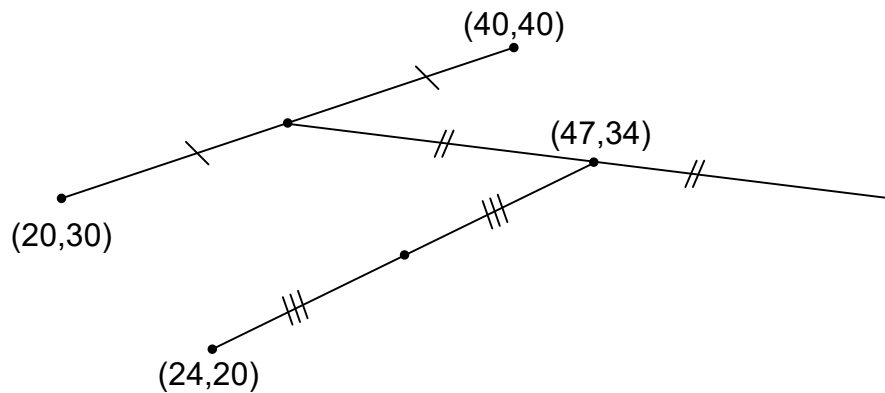


Revision on Midpoints, Endpoints, Expanding Brackets, Ratio and Iteration

Q1

Find the co-ordinates of the missing mid and end points on these lines.



Q2

The line $(2,25)$ to $(18, 45)$ is split in the ratio $3:7$. What are the co-ordinates of the point where the split falls?

Q3

Expand the following:

a $3(2a + 7) + 4(3a - 2)$

b $2x(3x + 4) - 5(2x - 2)$

c $(2x + 4)(5x + 8)$

Q4 Angela, Billy and Cameron split some sweets up in the ratio $5:3:2$. Angela had 12 more sweets than Cameron. How many sweets did each person get.

Q5 Gregory, Harriet and Ian had some money which they split in the ratio $4:7:2$. Harriet received £210. How much money did each of the others get?

Q6 Joshua, Sam and Ben received some money from the sale of a house. They received the money in the ratio $8:7:5$. Altogether, they received £180,000. How much did each person get?

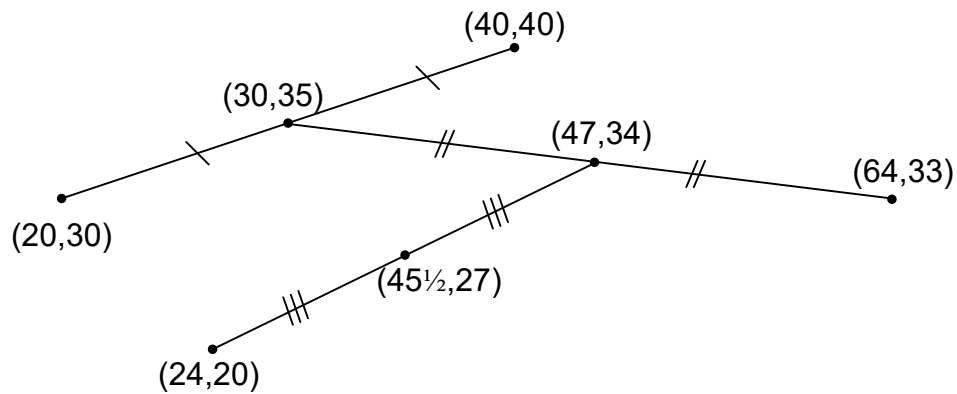
Q7 Billy's Cabs charge a standing charge of £2.50 and then 25p per mile. Jones Cars charge a standing charge of £1.50 and then 30p per mile.

a How much do they each charge for a journey of 7 miles?

b At what distance do they charge the same price?

Answers

1



- 2
- i $3+7 = 10$
 - ii $18 - 2 = 16$
 - iii $\frac{16}{10} = 1.6$
 - iv $1.6 \times 3 = 4.8$
 - v $2 + 4.8 = 6.8$
 - vi $45 - 25 = 20$
 - vii $\frac{20}{10} = 2$
 - viii $2 \times 3 = 6$
 - ix $25 + 6 = 31$
 - x So the co-ordinates are (6.8, 31)

- 3
- a $18a + 13$
 - b $6x^2 - 2x + 10$
 - c $10x^2 + 36x + 32$

4 $5 - 2 = 3$ (Angela has three more parts than Cameron)

$$\frac{12}{3} = 4 \text{ (One part is worth 4)}$$

Angela gets $5 \times 4 = 20$ sweets;

Billy gets $3 \times 4 = 12$ sweets;

Cameron gets $2 \times 4 = 8$ sweets.

5 Harriet received £210. She had a ratio of 7 parts.

$$\frac{210}{7} = 30 \text{ (The value of one part)}$$

Gregory gets $4 \times 30 = £120$;

Harriet gets $7 \times 30 = £210$;

Ian gets $2 \times 30 = £60$.

6 $8 + 7 + 5 = 20$ parts altogether.

$$\frac{180000}{20} = 9,000 \text{ is the value of one part.}$$

Joshua gets $8 \times 9000 = £72,000$;

Sam gets $7 \times 9000 = £63,000$;

Ben gets $5 \times 9000 = £45,000$.

7 a Billy's Cabs £4.25 Jones Cars £3.60

b They both charge the same money for journeys of 20 miles. (£7.50)