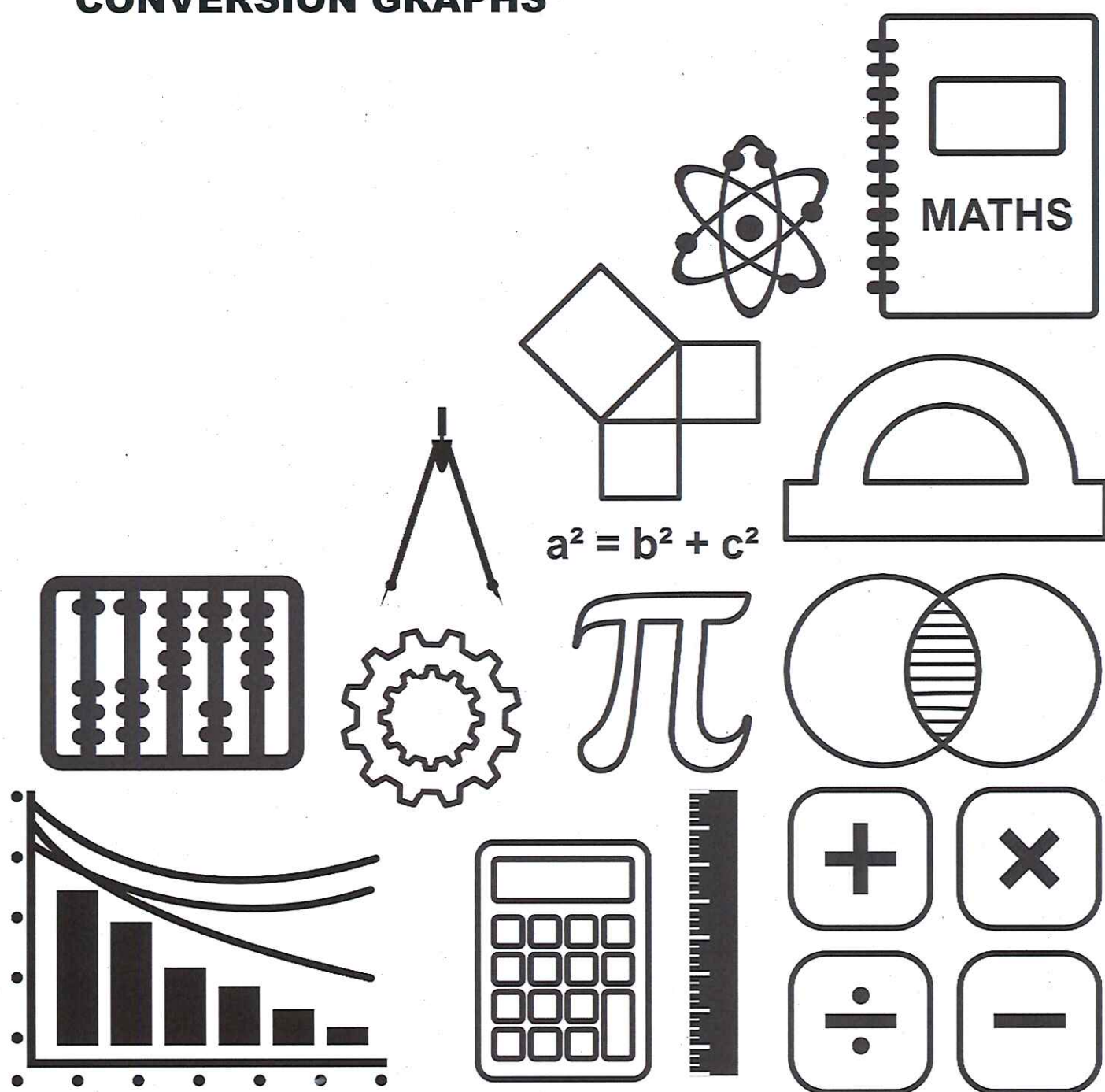


GCSE TOPIC BOOKLET CONVERSION GRAPHS

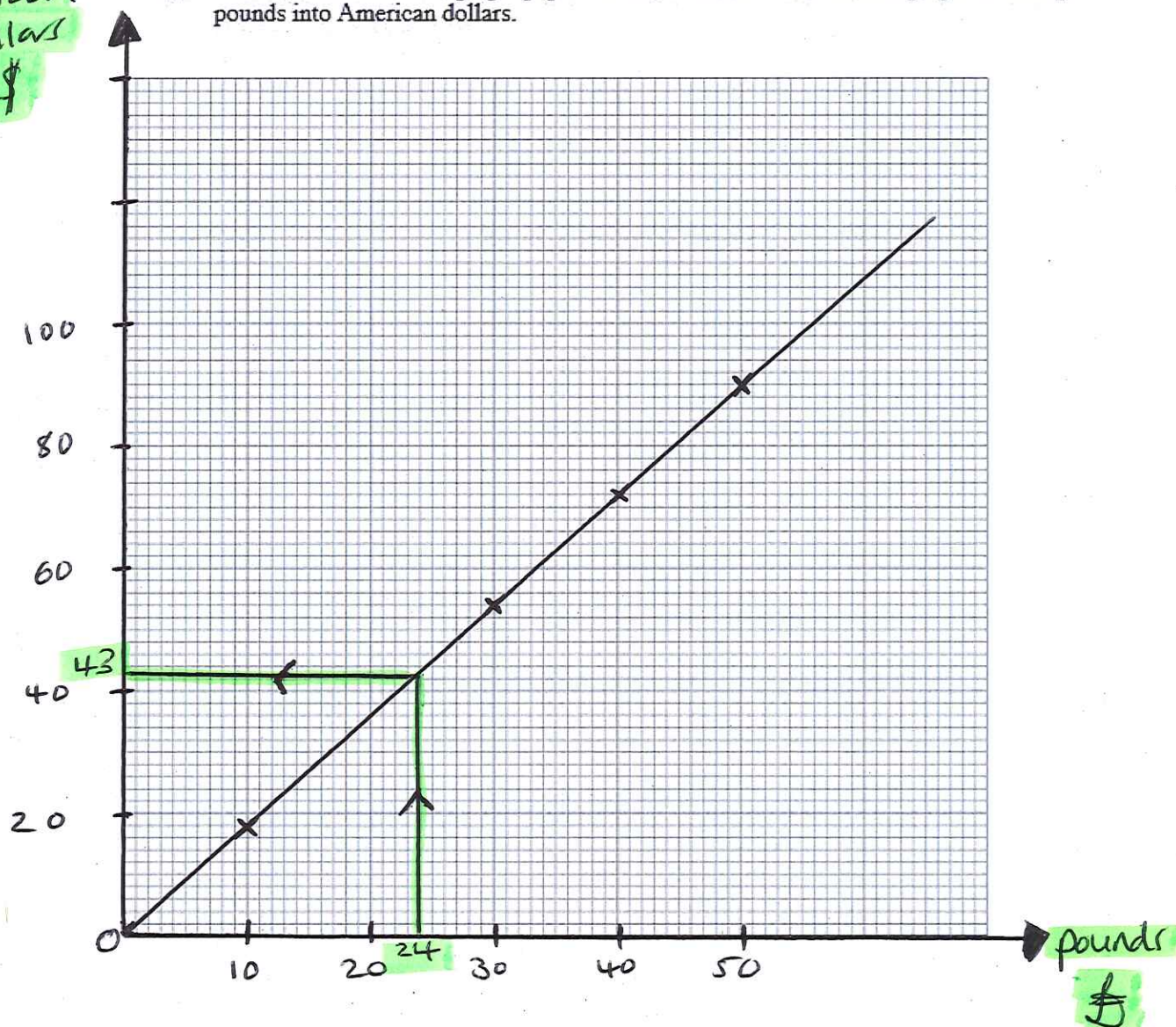
SOLUTIONS



1. (a) The following table shows how many American dollars a bank will give for various sums of money in pounds.

Pounds (£)	10	30	40	50
American dollars (\$)	18	54	72	90

- (i) Use the table and the graph paper below, to draw a conversion graph to change pounds into American dollars.



- (ii) Use your graph to convert

24 pounds into dollars \$43

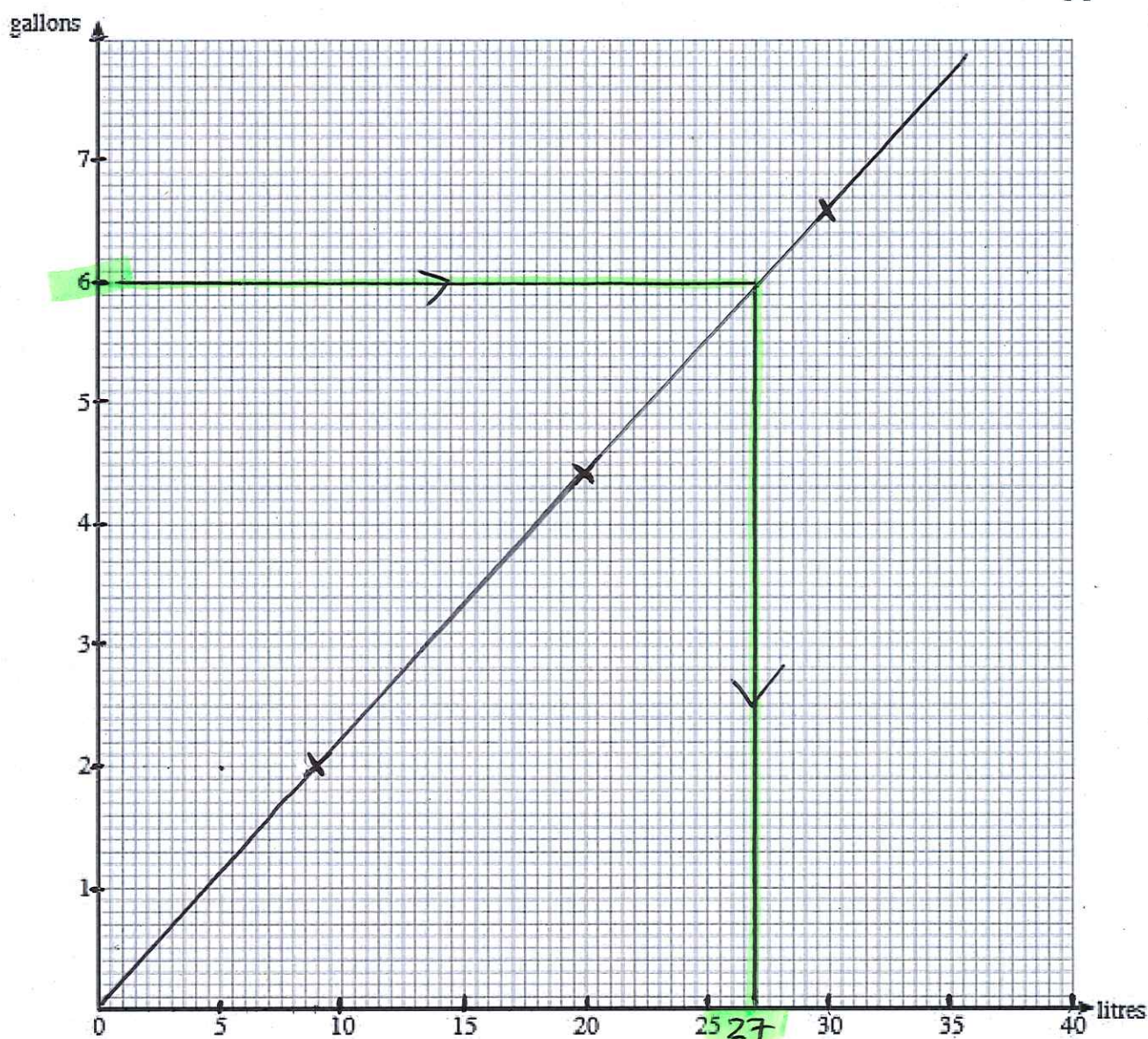
[4]

2. (a) The table shows the number of litres and the number of gallons in each of three volumes.

Litres	9	20	30
Gallons	2.0	4.4	6.6

Use the data in the table to draw a conversion graph between gallons and litres.

[2]



- (b) Use your graph to show how you can find an estimate for the number of litres in 30 gallons.

$$6 \text{ gallons} = 27 \text{ litres}$$

$$30 \text{ gallons} = 5 \times 6 \text{ gallons}$$

$$= 5 \times 27 \text{ litres}$$

$$= 135 \text{ litres}$$

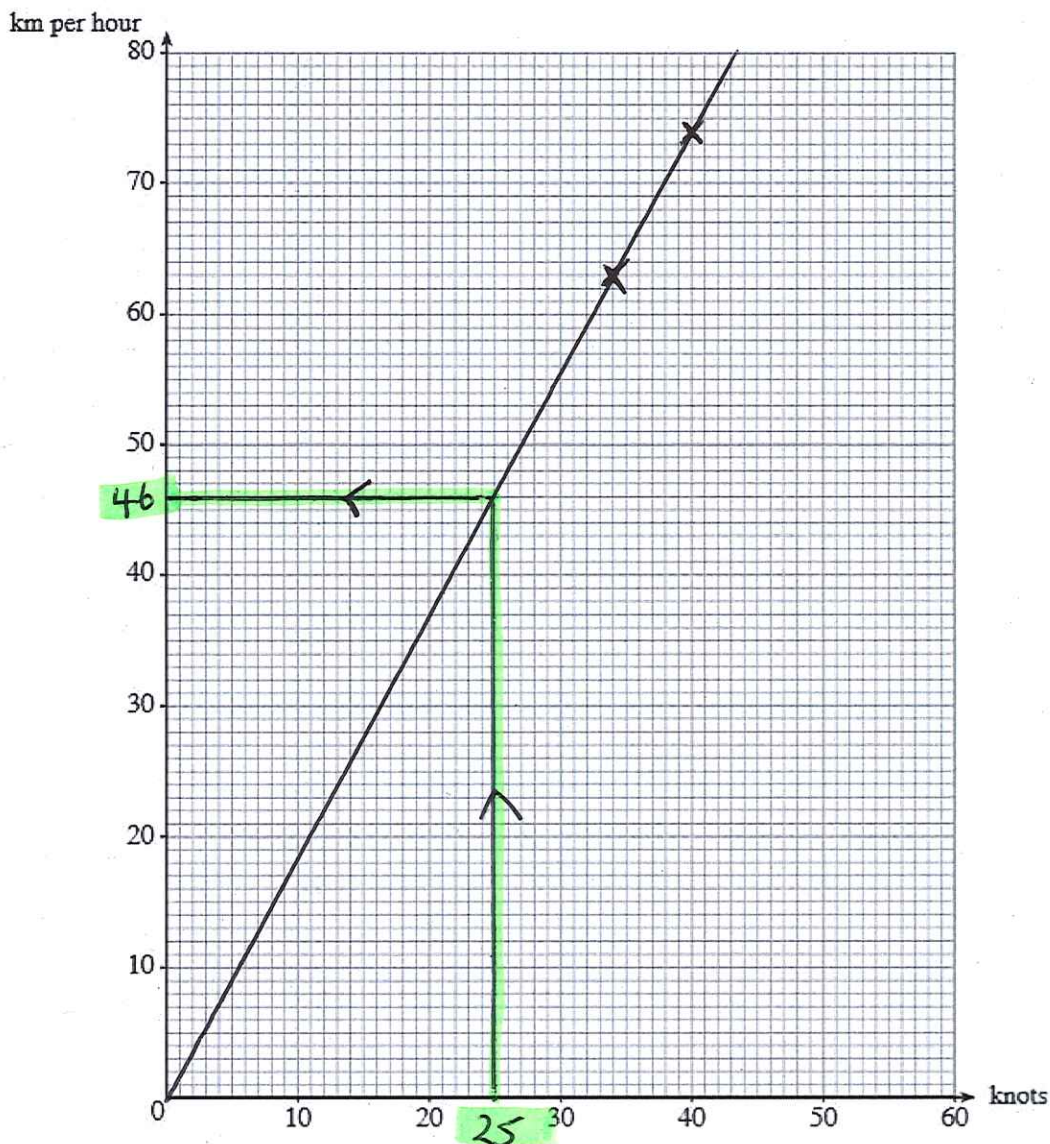
[2]

3. (a) The knot is a unit used to measure the speed of ships and aircraft. The table shows the number of knots and the number of km per hour for each of three speeds.

Knot	0	34	40
Km per hour	0	63	74

Use the data in the table to draw a conversion graph between km per hour and knots.

[2]



- (b) Find an estimate for 100 knots in km per hour. $25 \text{ knots} = 46 \text{ km/hour}$
 $100 \text{ knots} = 4 \times 25 \text{ knots}$
 $= 4 \times 46 = 184 \text{ km/hour}$

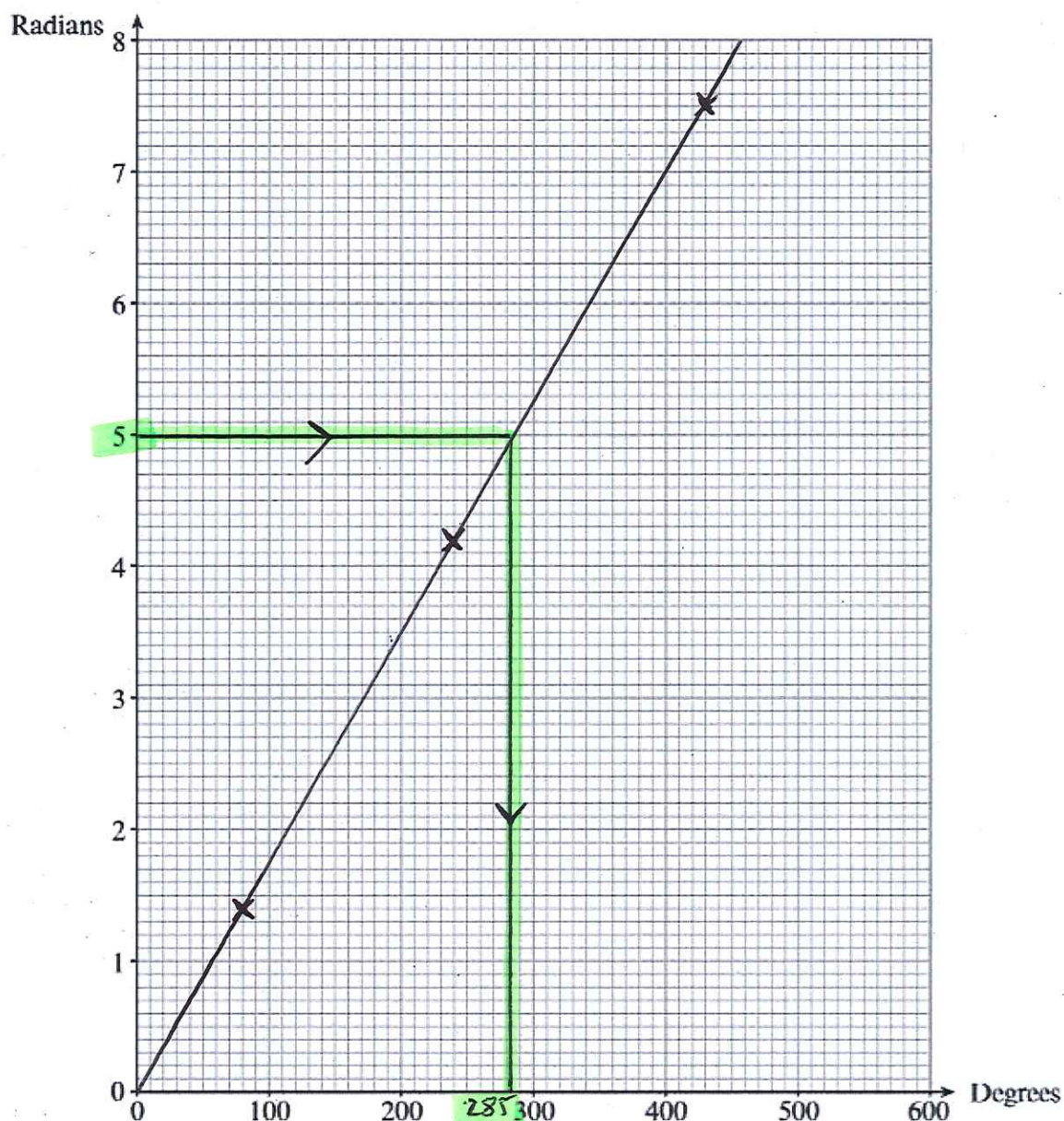
[2]

4. (a) The degree is a unit used to measure angles. Another unit used to measure angles is the radian. The table shows the number of degrees and the number of radians for each of three angles.

Degrees	80	240	430
Radians	1.4	4.2	7.5

Use the data in the table to draw a conversion graph between degrees and radians.

[2]



- (b) Find an estimate for 10 radians in degrees.

$$5 \text{ radians} = 285 \text{ degrees}$$

$$10 \text{ radians} = 2 \times 5 \text{ radians} = 2 \times 285$$

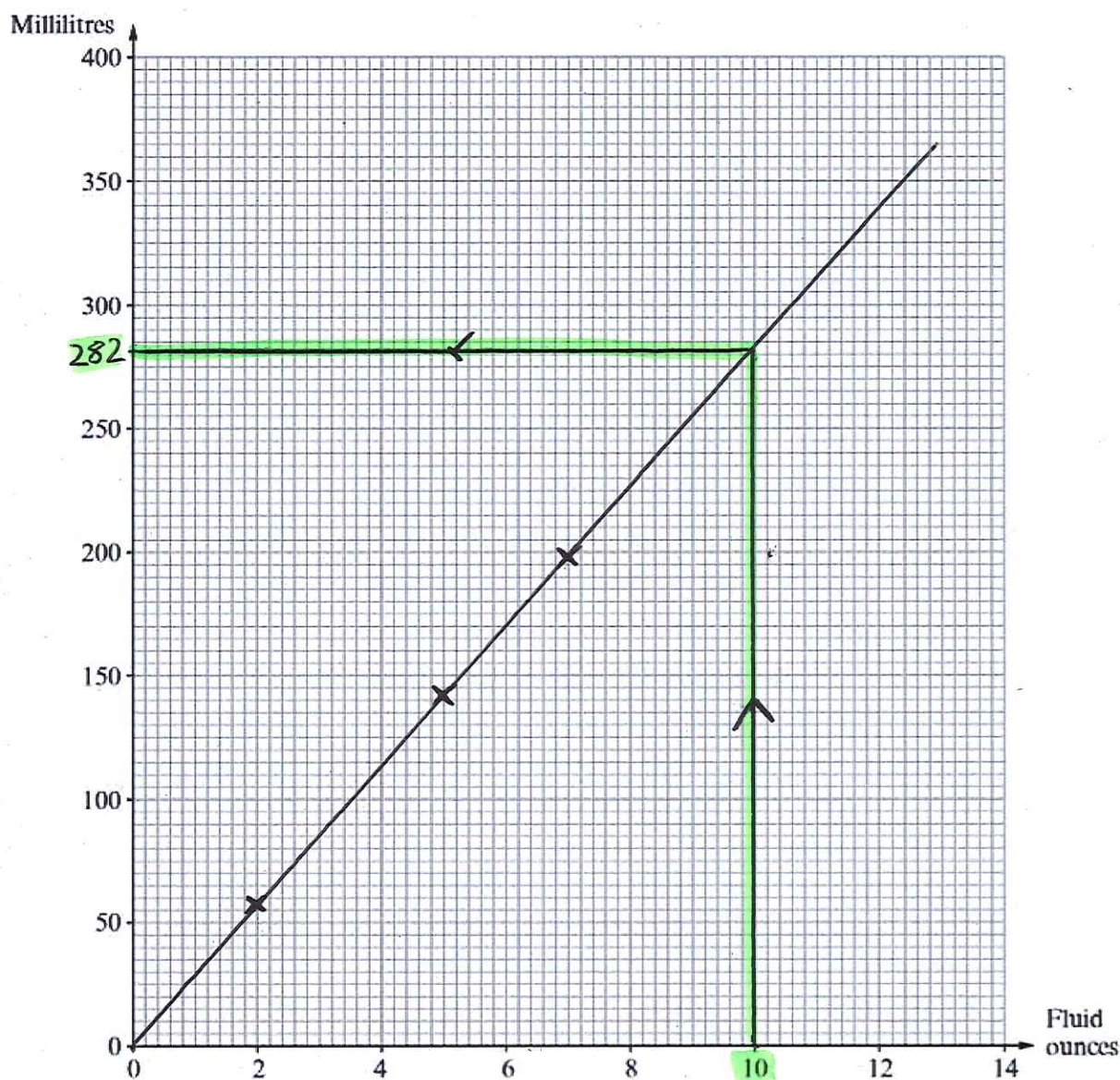
$$= 570 \text{ degrees}$$

[2]

5. (a) The fluid ounce is a unit of volume. A metric unit of volume is the millilitre (ml). The table shows the number of fluid ounces and the number of millilitres in each of three volumes.

Fluid ounces	2	5	7
Millilitres	57	142	199

Use the data in the table to draw a conversion graph between fluid ounces and millilitres. [2]



- (b) Use your graph to show how you can find an estimate for the number of millilitres in 30 fluid ounces.

$$\begin{aligned}
 10 \text{ fluid ounces} &= 282 \text{ ml} \\
 \underline{30 \text{ fluid ounces}} &= 3 \times 282 \text{ ml} \\
 &= \underline{846 \text{ ml}}
 \end{aligned}$$

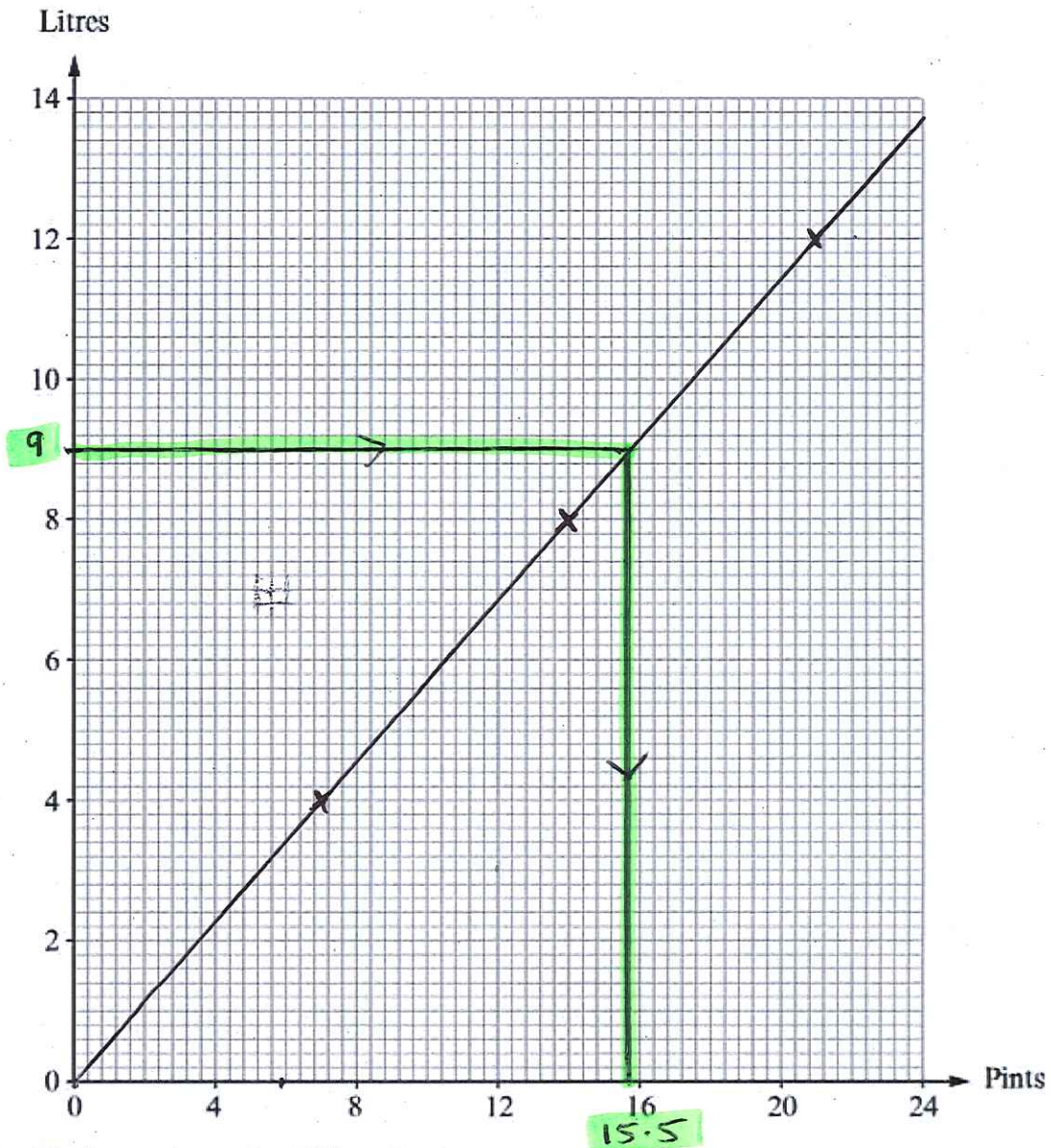
[2]

6. (a) The volume of liquid in a container can be measured in pints or in litres. The table shows the number of pints and the number of litres for each of three volumes.

Pints	7	14	21
Litres	4	8	12

Use the data in the table to draw a conversion graph between pints and litres.

[2]



- (b) Find an estimate for 45 litres in pints.

$$9 \text{ litres} = 15.5 \text{ pints}$$

$$\underline{45 \text{ litres}} = 5 \times 9 \text{ litres} = 5 \times 15.5 \text{ pints}$$

$$= \underline{77.5 \text{ pints}}$$

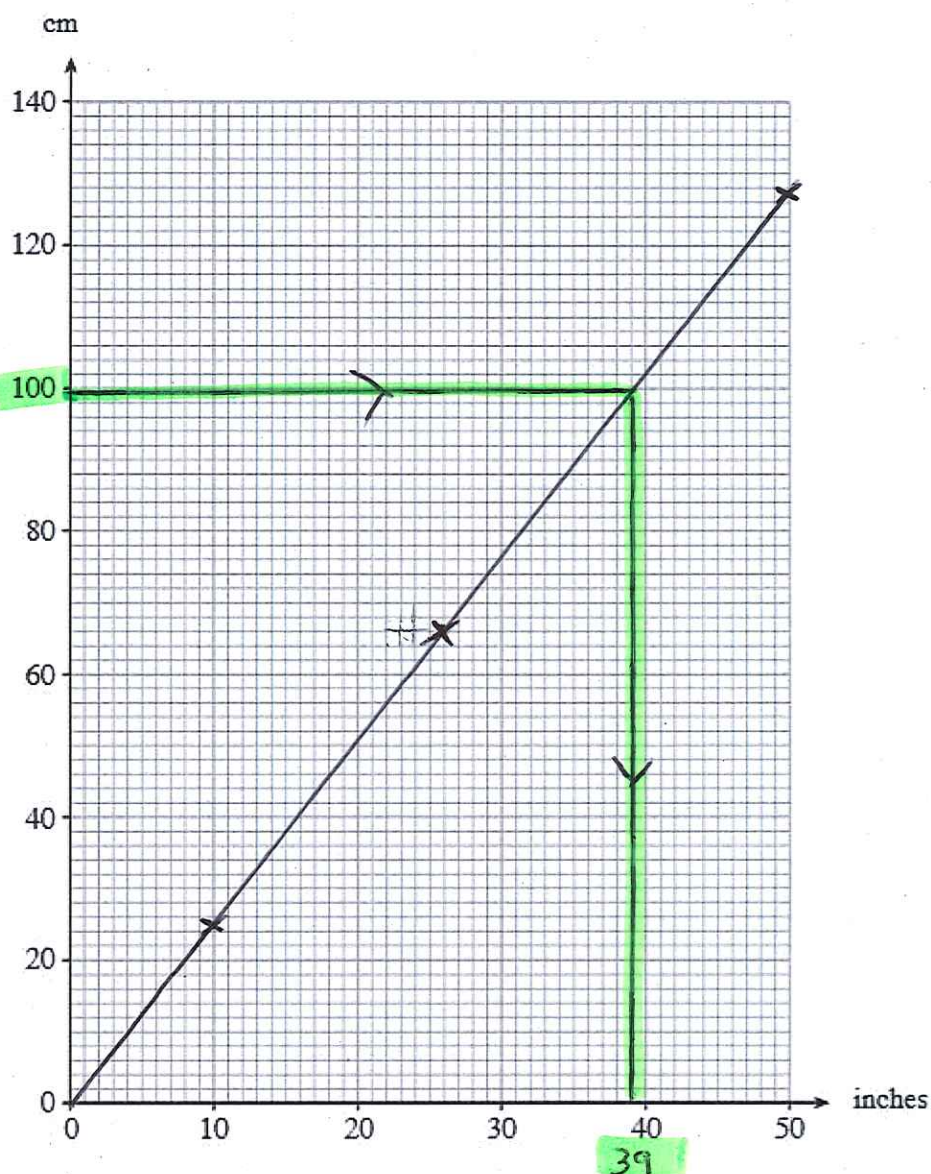
[2]

7. (a) The table gives 3 lengths, both in inches and in centimetres.

inches	10	26	50
centimetres	25	66	127

Use the data in the table to draw a conversion graph between inches and centimetres.

[2]



- (b) Use your graph to find an estimate for 300 centimetres in inches.

$$100 \text{ cm} = 39 \text{ inches}$$

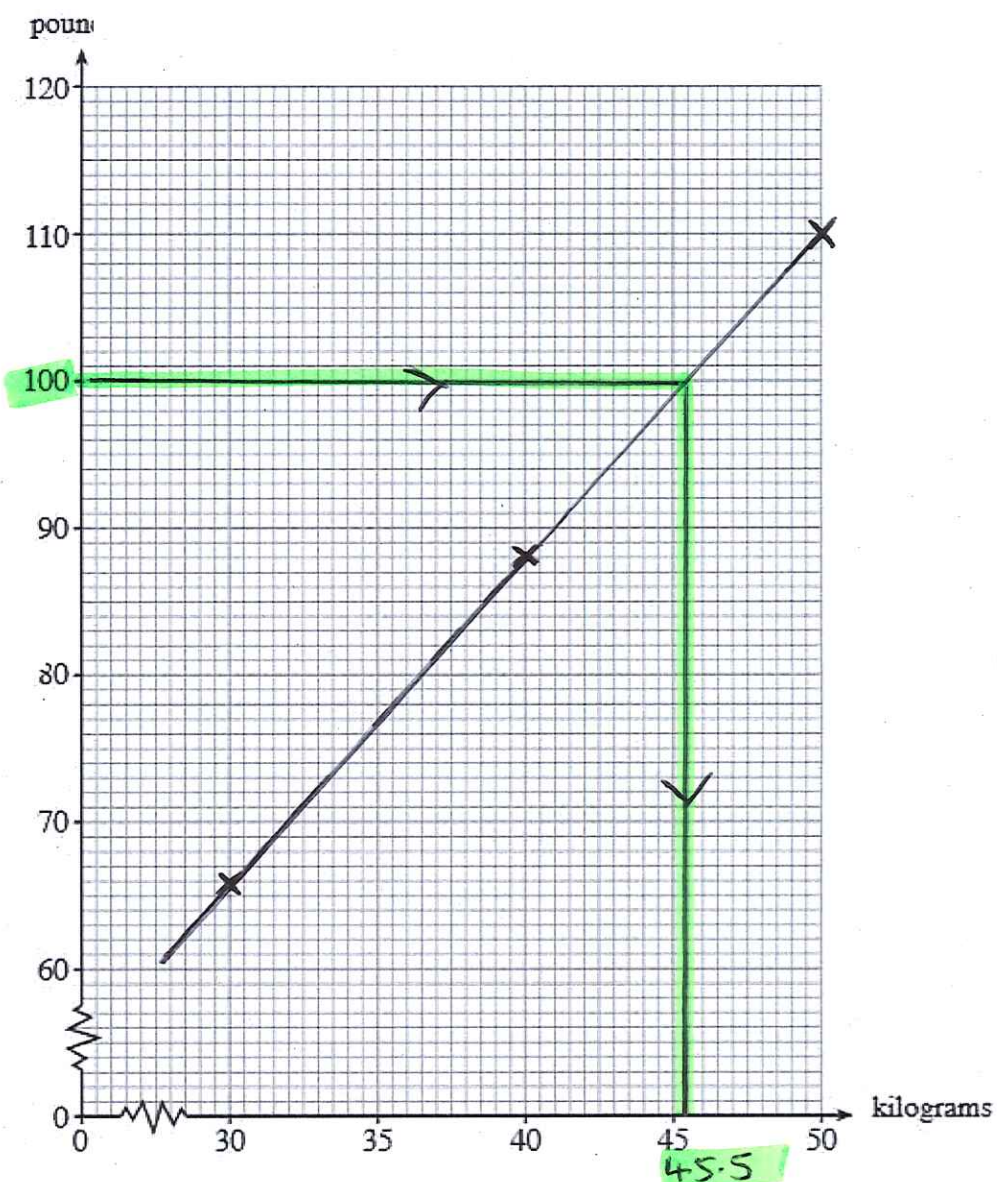
$$300 \text{ cm} = 3 \times 100 \text{ cm} = 3 \times 39 \text{ inches} = 117 \text{ inches}$$

[2]

8. (a) The table gives the masses of 3 people, both in pounds and in kilograms.

Kilograms	30	40	50
Pounds	66	88	110

Use the data in the table to draw a conversion graph between kilograms and pounds. [2]



- (b) Use your graph to find an estimate for the number of kilograms in 200 pounds.

$$100 \text{ pounds} = 45.5 \text{ kg}$$

$$\underline{200 \text{ pounds}} = 2 \times 45.5 \text{ kg} = \underline{91 \text{ kg}}$$

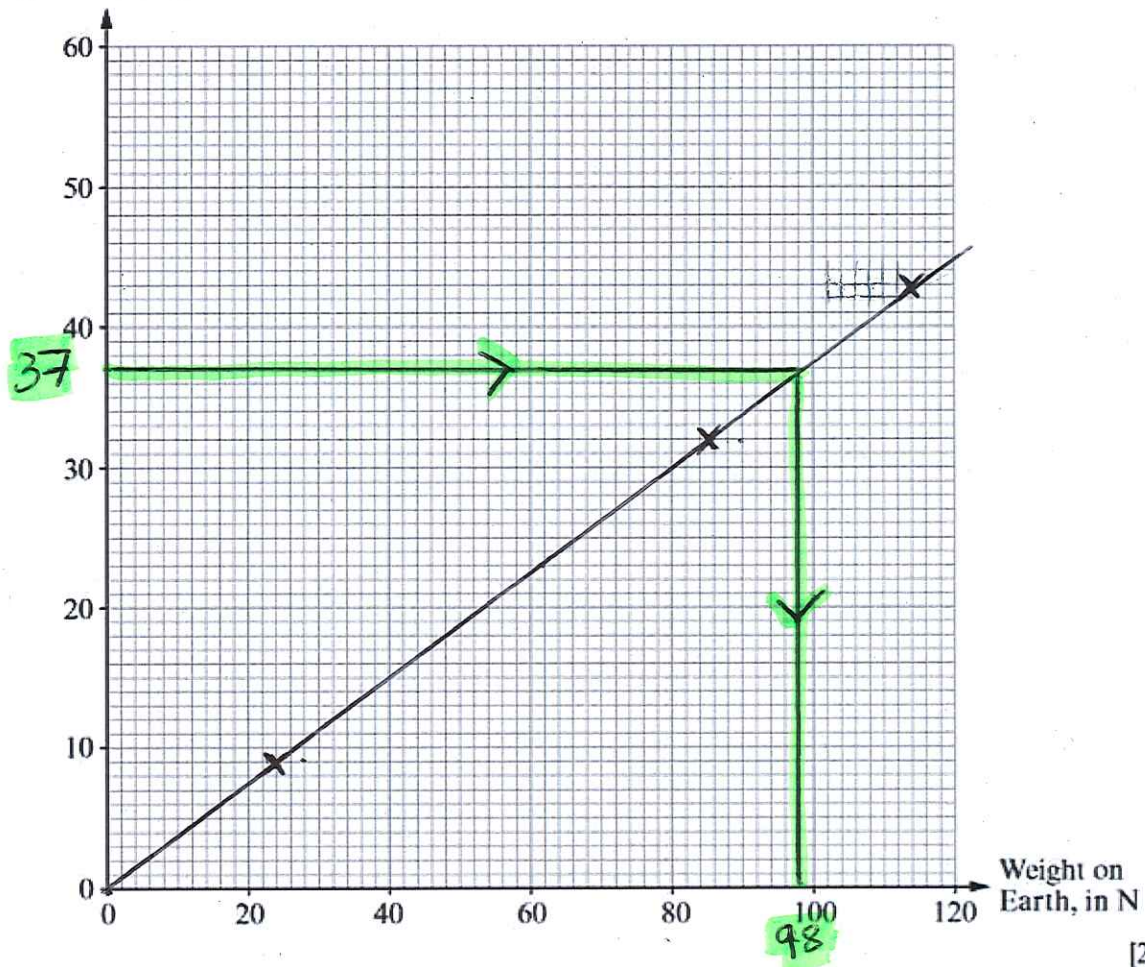
[2]

9. (a) The weight of an object on the planet Mars is different from the object's weight on Earth. The table shows the weight in newtons (N) of three different objects on Earth and on Mars.

Weight on Earth (N)	114	85	24
Weight on Mars (N)	43	32	9

Use the data in the table to draw a conversion graph between weights on Earth and weights on Mars.

Weight on Mars, in N



- (b) A rock weighs 370 N on Mars.
Find an estimate for the weight of this rock on Earth.

$$37 \text{ N (mars)} = 98 \text{ N (earth)}$$

$$\begin{aligned} 370 \text{ N (mars)} &= 10 \times 98 \text{ N (earth)} \\ &= 980 \text{ N on earth} \end{aligned}$$

[2]