1. The local authority has created a new cycle path and decide to measure the cycle traffic.

   The frequency table shows information about the number of cycles per minute which pass a traffic measurement machine on Tuesday.

| Number of cycles | Frequency |
|---|---|
| 0 | 10 |
| 1 | 9 |
| 2 | 5 |
| 3 | 6 |
| 4 | 5 |
| 5 | 3 |
| 6 | 11 |
| 7 | 5 |
| 8 | 4 |
| 9 | 2 |

   (a) Write down the median number of cycles.

   (a) .....

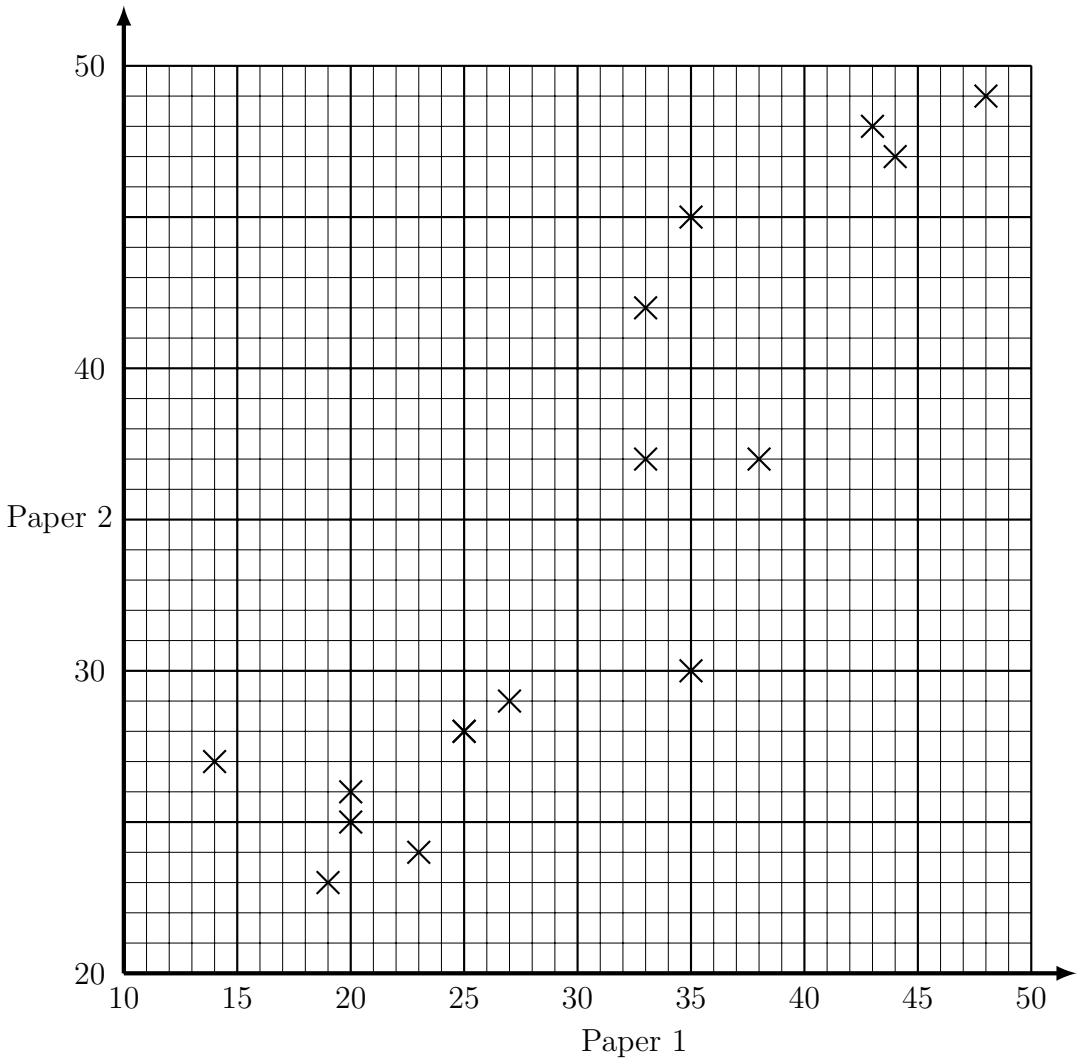
   (b) Write down the mode number of cycles that the machine measured.

   (b) .....

2. Write 125 as a product of its prime factors

   2. .....

3. The scatter graph shows the marks that some students received for paper 1 and paper 2 of their exam.




Lesley got 29 marks on paper 1.

Estimate Lesley's mark for paper 2.

3. .....

4. Find the Highest Common Factor (HCF) of 42 and 60

4. .....

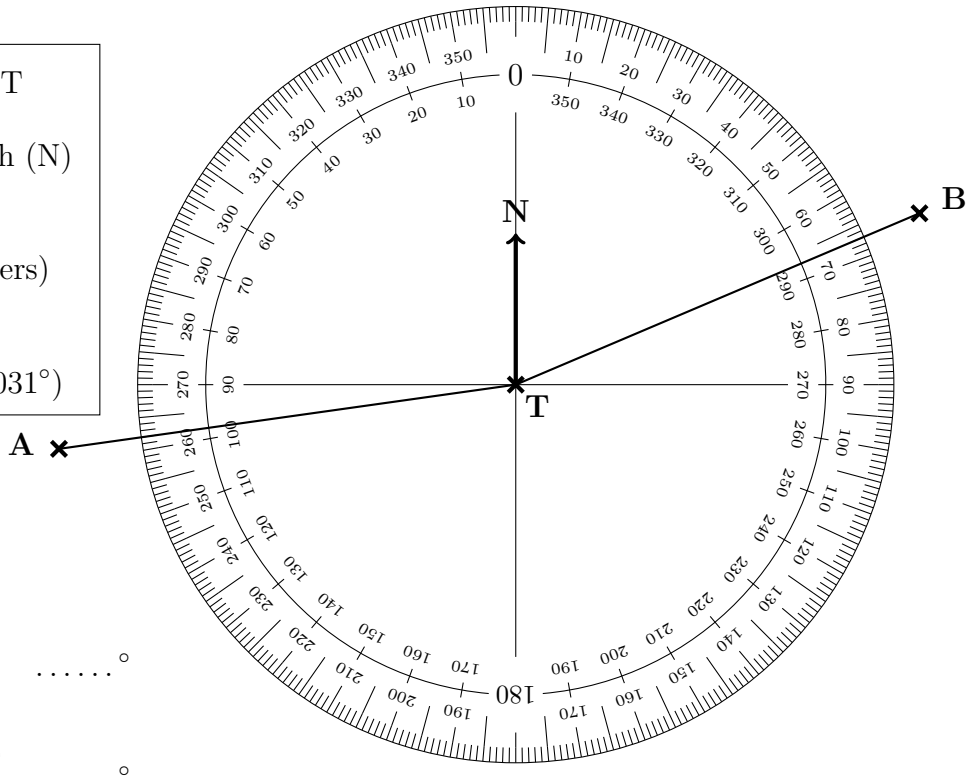
5. The diagram shows an angle measurer ready for measuring bearings from a tower T.

Centre at the "from" letter T

The 0 (zero) line faces North (N)

Measure clockwise
(use the outside numbers)

Write down 3 digits
(e.g. 31 is 031°)




Write down

(a) the bearing of A from T ..... °

(b) the bearing of B from T ..... °

6. Five students each spin a biased spinner a number of times.

The table shows the the number of wins and loses each student got.

| | Ines | Jake | Keira | Lenny | Maisie |
|---|---|---|---|---|---|
| win | 37 | 19 | 4 | 1 | 2 |
| lose | 63 | 61 | 6 | 4 | 3 |

The spinner will be spun one more time.

(a) Maisie says "My results give a better estimate of the probability of a win on the spinner than Ines, Jake, Keira or Lenny's results"

Is Maisie correct?

Explain your answer.

.....

.....

(b) Use all the results to work out the best estimate for the probability that the spinner will land on win.

(b) .....

7. (a) Work out $\frac{5}{6} \times \frac{4}{5}$

Give your answer in its simplest form.

(a) .....

8. (a) Work out $\frac{1}{3} \div \frac{5}{6}$

Give your fraction in its simplest form.

(a) .....

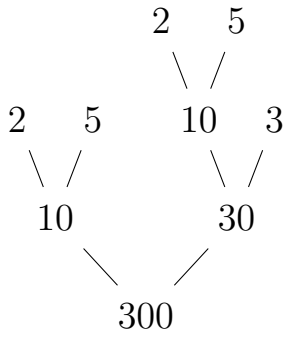
**Stuck?** try these

9. (a) Work out $\frac{1}{3}$ x $\frac{2}{7}$

(a) .....

10. Here is a prime factor tree.

(i) Circle the leaves (prime factors)




(ii) Write 300 as a product of its prime factors

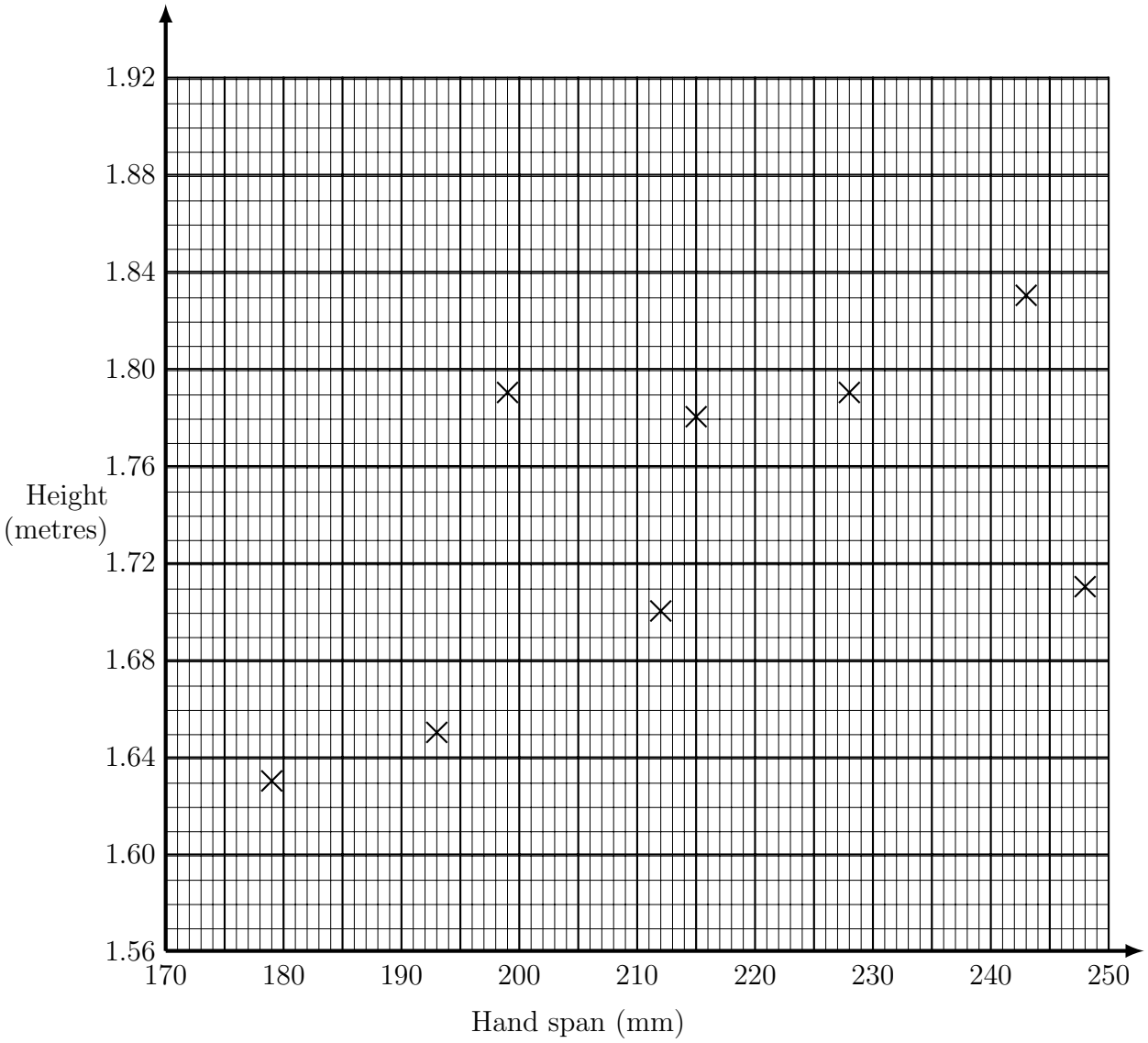
10. .....

11. (a) Work out $\frac{5}{9} \div \frac{3}{4}$

(a) .....

12. The scatter graph shows the handspan of 8 guitar players and their height.

For each guitar player it shows the handspan, in millimetres and their height in metres.




The table gives the handspan and the height of 2 more guitar players.

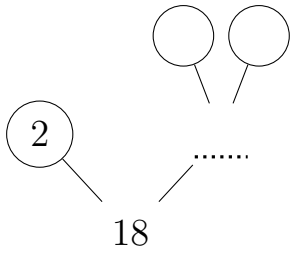
| Hand span (mm) | 233 | 204 |
|---|---|---|
| Height (metres) | 1.89 | 1.74 |

(a) Complete the scatter graph to show the information in the table.

(b) What kind of correlation does the scatter graph show?

(b) .....

13. (i) Complete this prime factor tree.




(ii) Write 18 as a product of its prime factors

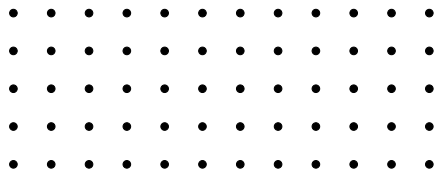
13. .....

14. Write 63 as a product of its prime factors

14. .....

15. Complete $\frac{1}{2} = \frac{}{4}$

You may use this dotted paper to draw fractions



16. Write $\frac{2}{6}$ in its simplest form.

16. .....

17. Write $\frac{12}{20}$ in its simplest form.

17. .....

18. Write $\frac{6}{42}$ in its simplest form.

18. .....

19. The frequency table shows information about the scores of a dice.

| Score | Frequency | |
|---|---|---|
| 1 | 3 | |
| 2 | 1 | |
| 3 | 6 | |
| 4 | 3 | |
| 5 | 8 | |
| 6 | 3 | |

(a) Write down the median score.

(a) .....

(b) Write down the mode score.

(b) .....

20. The probability that a car will arrive at a green traffic light at a junction is 0.2
Work out the probability that the traffic light will **not** be green.

20. .....