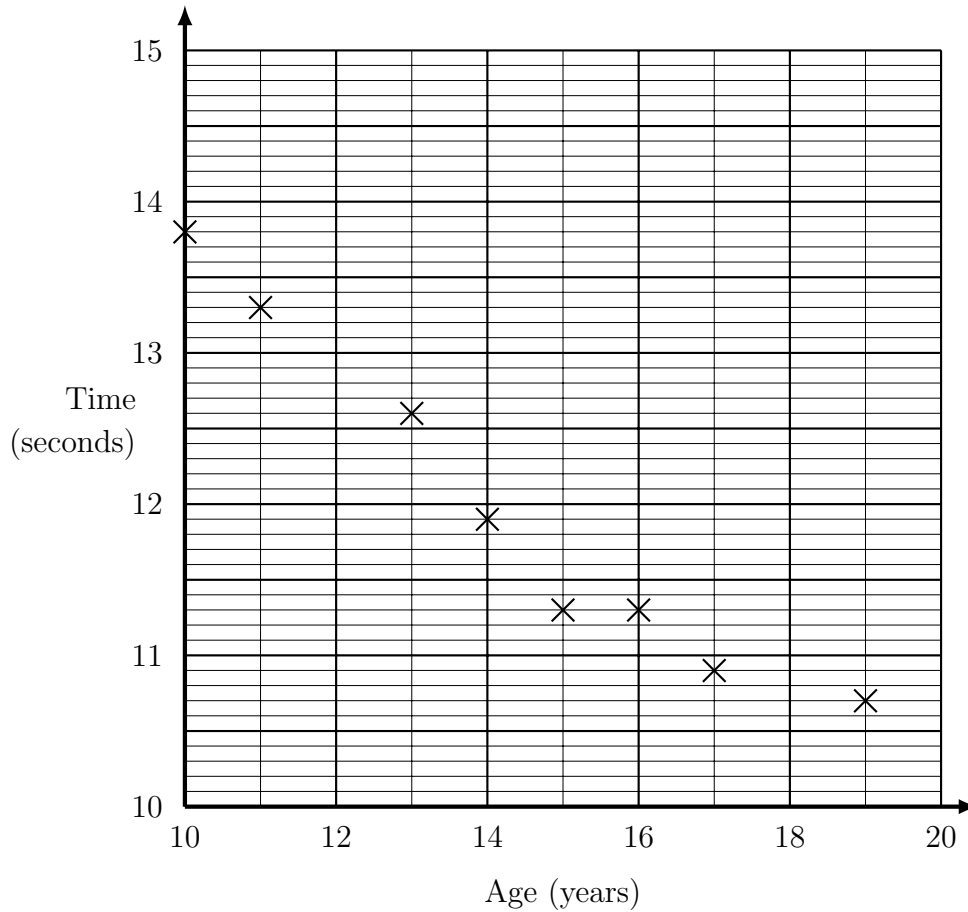


1. The scatter graph shows some information about winners of the boys 100m county finals. The finalists only race with other boys their same age. The graph shows the age, in years and the time, in seconds of each winner.



The 12 year old winner finishes in 13.1 seconds.

The 18 year old winner finishes in 10.6 seconds.

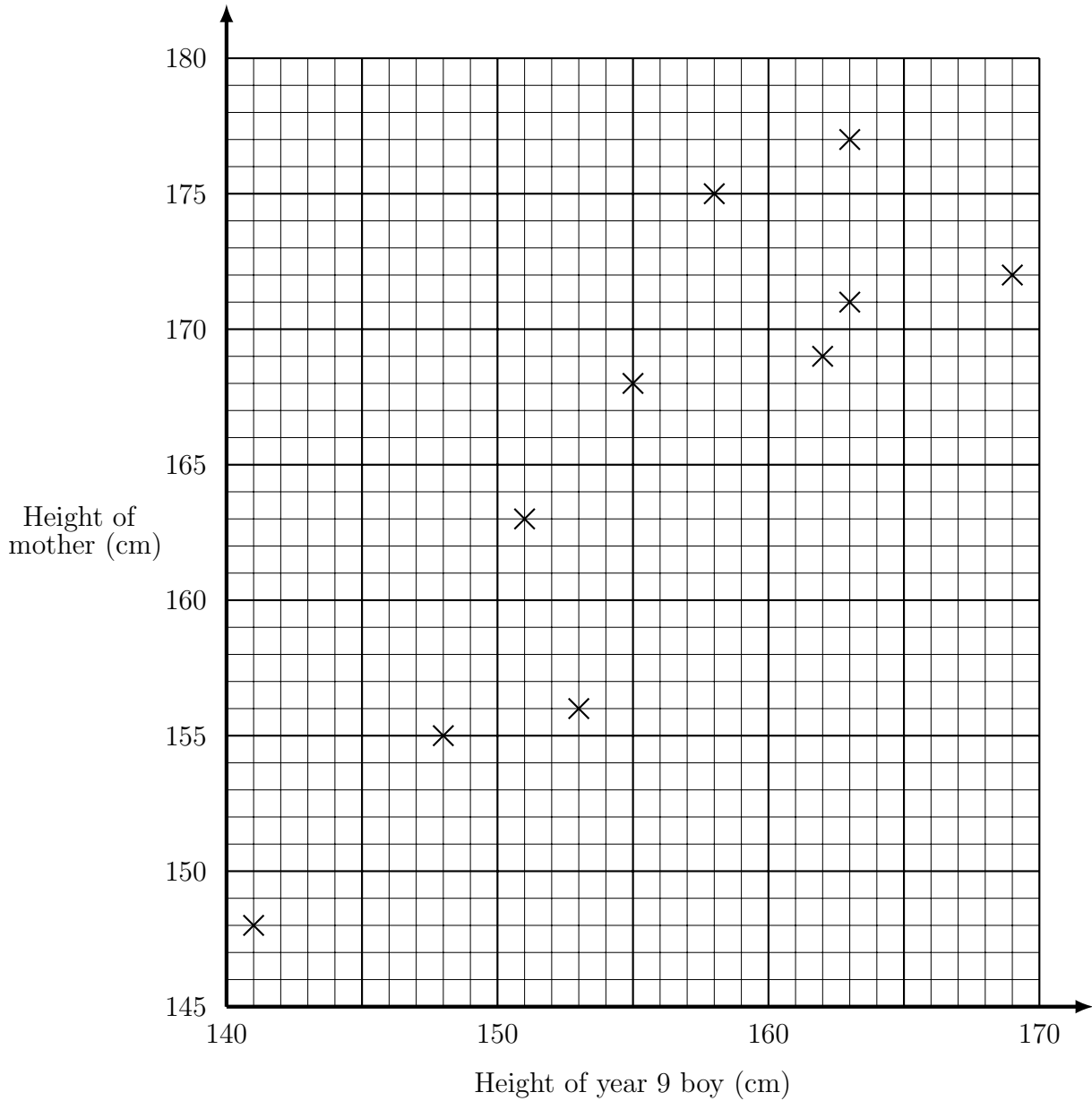
- (a) Add the 12 and 18 year old's information to the scatter graph
 (b) What kind of correlation does the scatter graph show?

(b)

2. Solve $2(w - 5) = 4$

$w = \dots\dots\dots$

3. The scatter graph shows some information about the height of 10 year nine boys and their mother's height.



A different mother of a boy in year 9 is 174 cm tall.

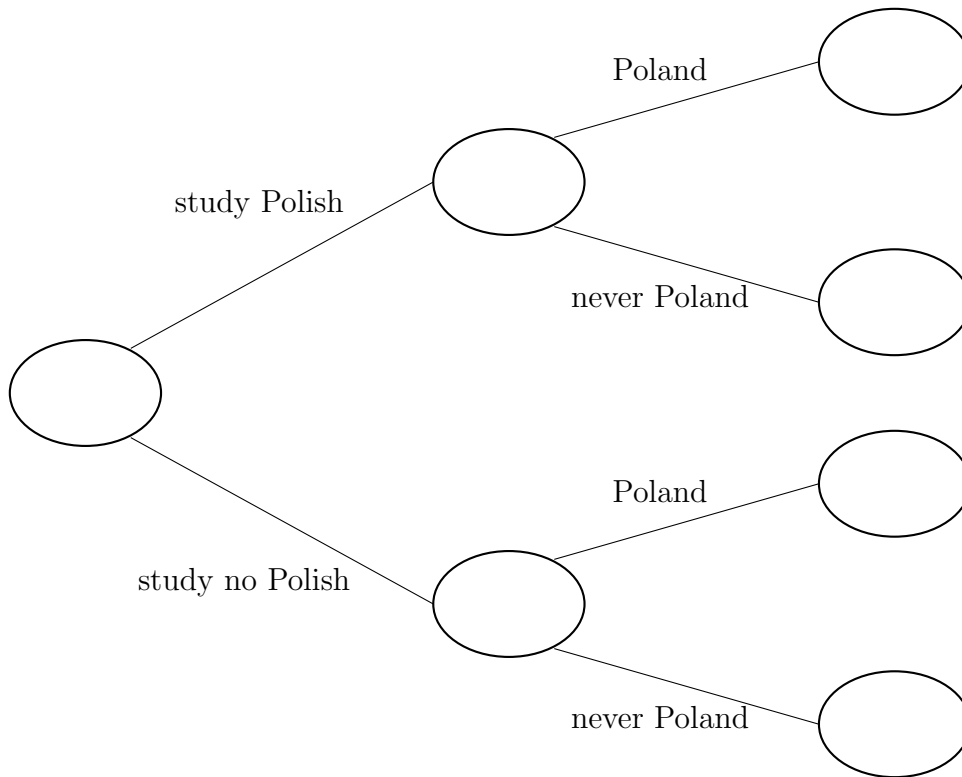
Estimate the height of her son.

..... cm

4. Solve $3n + 2 = n + 10$

$n = \dots\dots\dots$

5. 160 students were asked about the languages they studied and countries they had been to.
 13 out of the 133 students who do not study Polish have been to Poland.
 125 of the students have never been to Poland.
 Use this information to complete the frequency tree.



6. Expand $p(p + 4)$

6.

7. Expand and simplify $(m - 3)(m + 5)$

7.

8. Expand and simplify $(x - 1)(x - 4)$

8.

9. Factorise $2p - 6$

9.

10. Factorise $x^2 - 3x$

10.

11. Factorise $6xy^2 - 2x^2y$

11.

12. Write 250 as a product of its prime factors

12.

13. (a) Write 75 as a product of its prime factors.

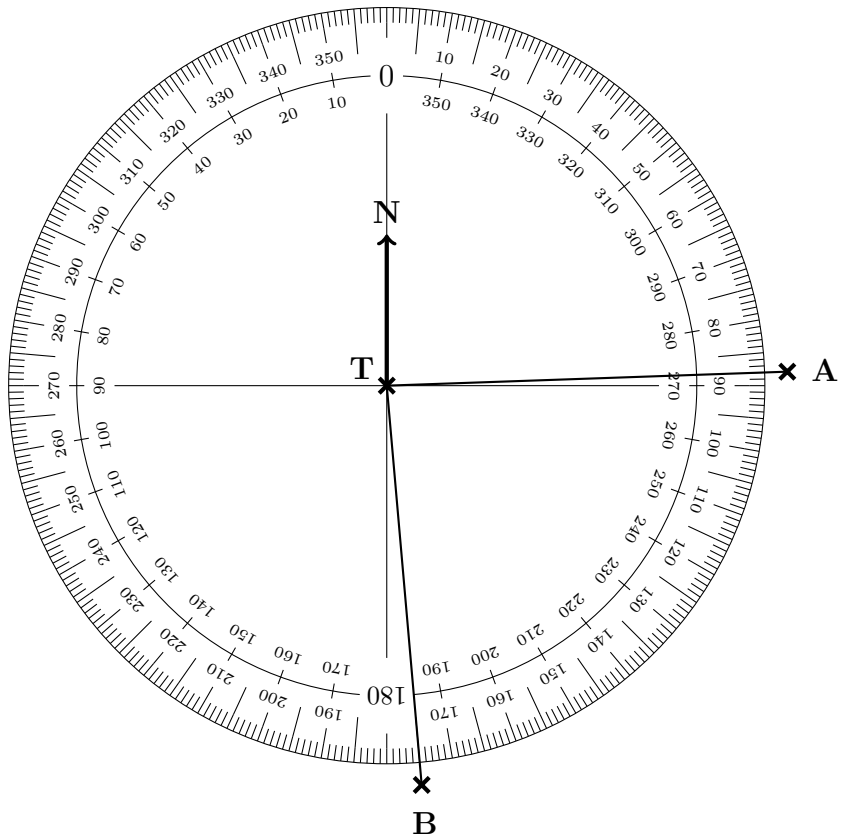
(a)

(b) Find the Highest Common Factor (HCF) of 45 and 75

(b)

14. 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

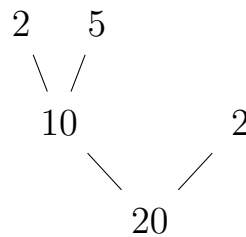
(a) the bearing of A from T°

(b) the bearing of B from T°

Stuck? try these

15. Here is a prime factor tree.

(i) Circle the leaves (prime factors)



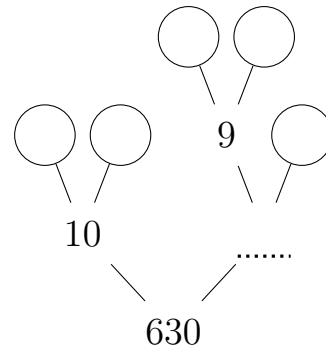
(ii) Write 20 as a product of its prime factors

15.

16. Expand $3(m + 1)$

16.

17. (i) Complete this prime factor tree.



(ii) Write 630 as a product of its prime factors.

17.

18. Write 900 as a product of its prime factors

18.

Harder? try these

19. Factorise $x^2 - 36$

19.