

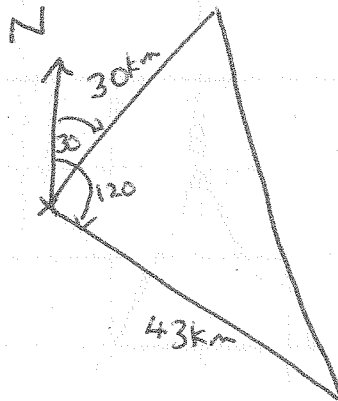
m6 = 11 days to go!

19 From a lighthouse, L, a ship can be seen 30 km away on a bearing of 030°

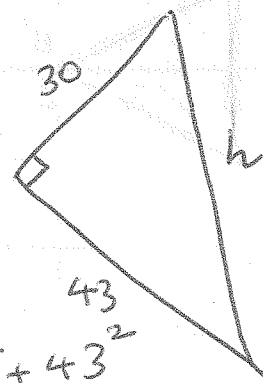
From L, an oil rig can be seen 43 km away on a bearing of 120°

Calculate the direct distance between the ship and the oil rig.
A solution by scale drawing will not be accepted.

Picture help:



Pythagoras



$$h^2 = 30^2 + 43^2$$

$$h^2 = 900 + 1849$$

$$h^2 = 2749$$

Answer 52.4 km [5]

The equation

$$x^3 + 4x = 170$$

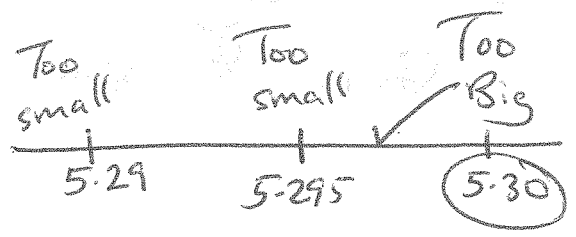
has a solution between 5 and 6.

Guess & Check

Use trial and improvement to find this solution.

Give your answer correct to 2 decimal places.

You must show all your working.

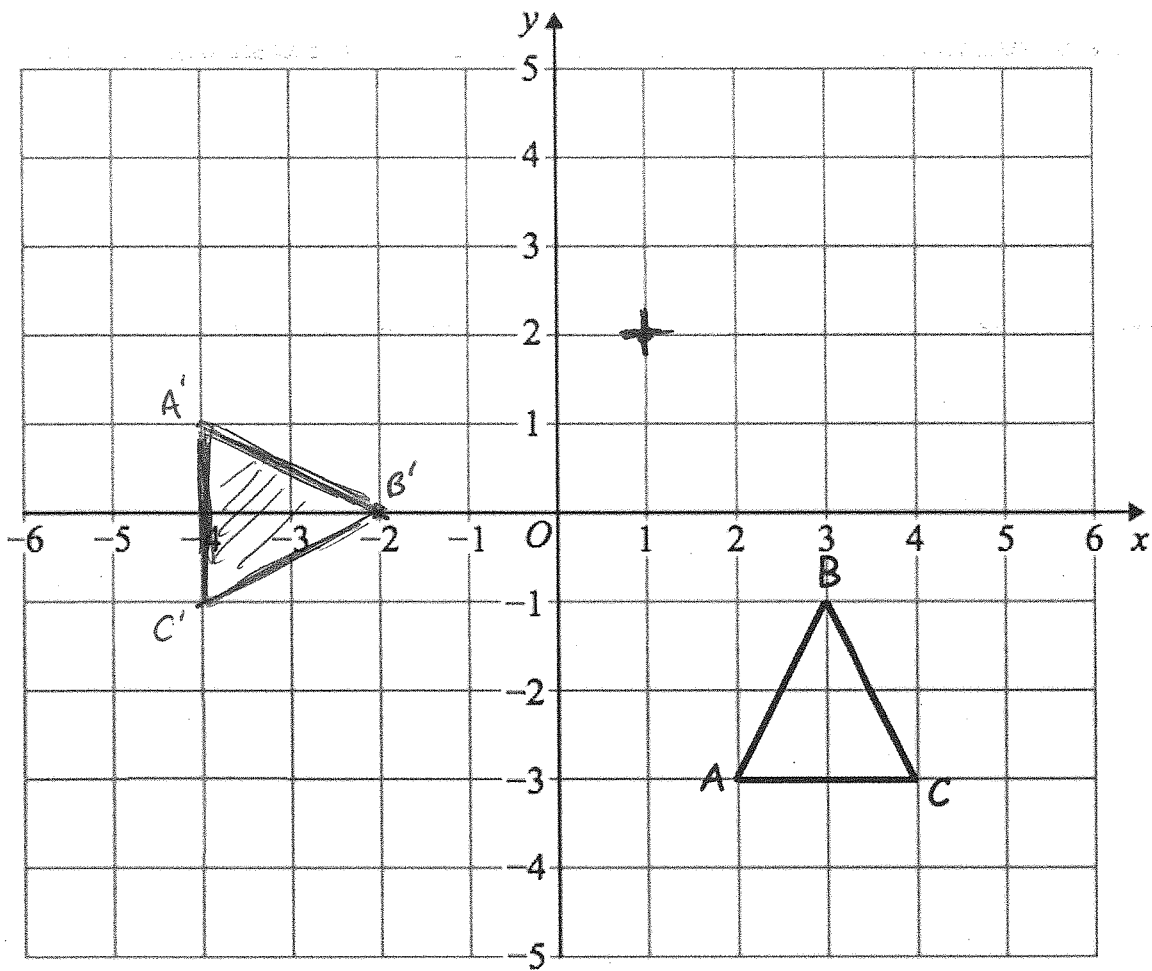


x	$x^3 + 4x$	TB or TS
5	$5^3 + 4 \times 5 = 145$	Too Small
5.3	$5.3^3 + 4 \times 5.3 = 170.077$	Too big
5.28	$5.28^3 + 4 \times 5.28 = 168.317$	Too Small
5.29	$5.29^3 + 4 \times 5.29 = 169.195$	Too Small
5.295	$5.295^3 + 4 \times 5.295 = 169.636$	Too Small

x = 5.30

Check 1/2 way point

(4)



Rotate triangle ABC 90° clockwise about centre (1, 2)

Use Tracing Paper
Stab & Spin

(3)