

Paper 3 Preparation Paper

Edexcel Foundation



Corbettmaths

You will need a calculator

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

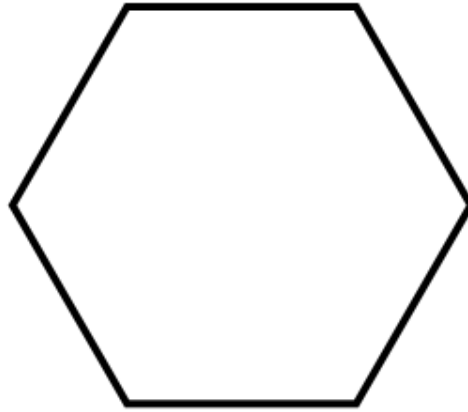
Revision for this test

www.corbettmaths.com/contents



1. LINE SYMMETRY AND ROTATIONAL SYMMETRY (videos 316, 317)

The diagram below shows a regular hexagon.



(a) Write down the order of rotational symmetry of the hexagon.

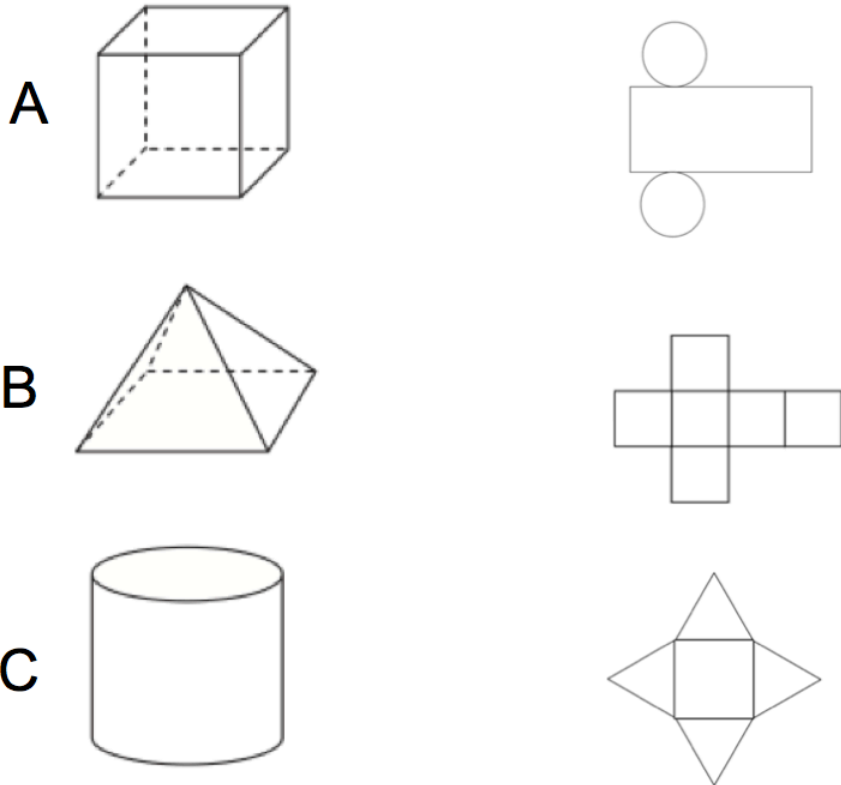
.....
(1)

(b) On the diagram draw in all the lines of symmetry.

(2)

2. NETS (video 4)

The diagram below shows three 3D solid shapes and their nets.



(a) Match each solid shape to the correct net.

(3)

(b) Name shape C

.....
(1)

(c) Write down the number of faces of shape A.

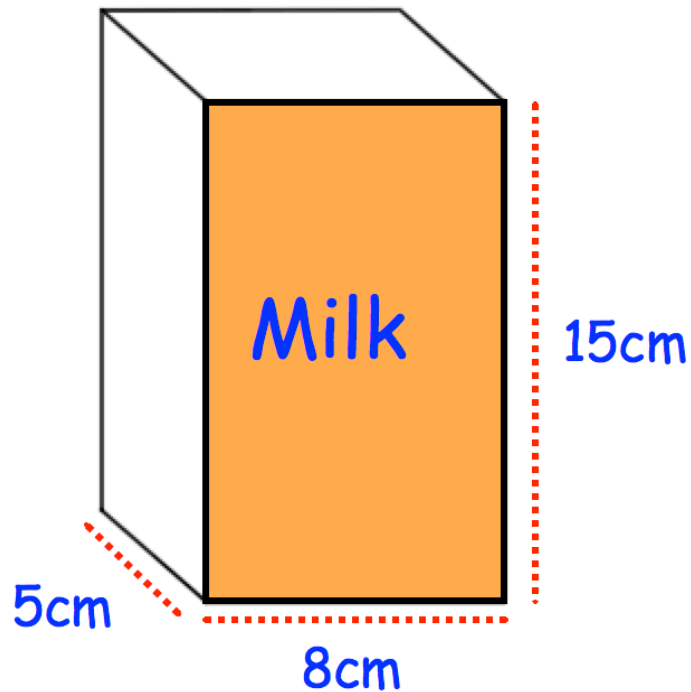
.....
(1)

(d) Write down the number of vertices of shape B.

.....
(1)

3. VOLUME OF A CUBOID (video 355)

A carton of milk is shown below.
The carton is in the shape of a cuboid.



The depth of the milk in the carton is 12cm.

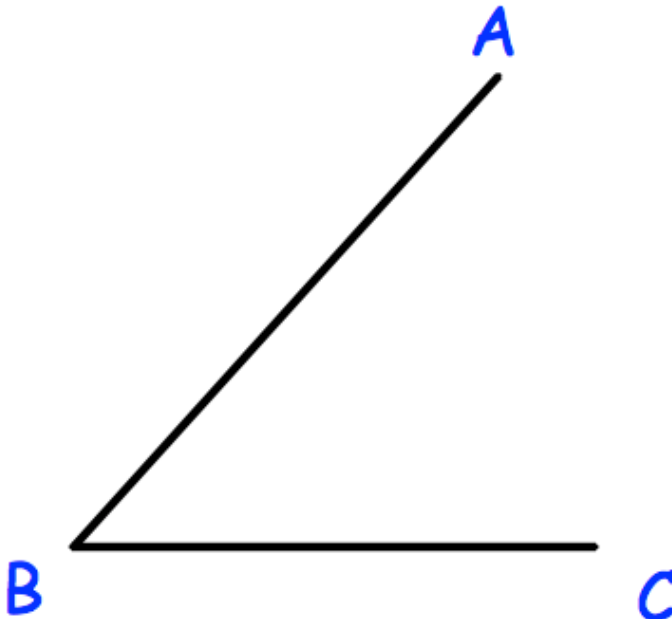
The carton is turned so that it stands on the shaded (orange) face.

Work out the depth of the milk now.

.....cm
(3)

4. CONSTRUCTIONS (videos 72, 78, 83)

Using ruler and compasses, construct the bisector of angle ABC.



(2)

5. SQUARE NUMBERS AND CUBE NUMBERS (videos 226, 228, 212, 214)

729 is both a square number and a cube number.

Find two other numbers that are both square numbers and cube numbers.

..... and
(2)

6. FRACTIONS OF AMOUNTS (video 137)

When a bouncy ball is dropped it will rise to $\frac{4}{5}$ of the height it dropped from.

A ball is dropped from a height of 5 metres and is allowed to bounce repeatedly.

Which is the least number of bounces until its rebound height is less than 2 metres?

Show your working.

.....bounces
(3)

7. COMPOUND INTEREST (video 236)

A car was bought for £18000.

Its value depreciated by 15% each year for the first three years.

What was its value at the end of the three years?

£.....
(3)

8. USE OF A CALCULATOR (video 352)

Calculate the value of

$$\begin{array}{r} 13.2 - 1.29 \\ \hline 39.1 - 44.8 \end{array}$$

(a) Write down your full calculator display.

.....
(1)

(b) Give your answer to three significant figures.

.....
(1)

9. TWO-WAY TABLES (video 319)

100 people study one language at a college.

Some people study French.
Some people study Spanish.
The rest of the people study German.

54 of the people are male.
20 of the 29 people who study Spanish are female.
31 people study German.
15 females study French.

Work out the number of males who study German.

.....
(4)

10. AVERAGES and RANGE (videos 56, 50, 53, 57)

James has a spinner that has sections labelled 1 to 5.
He spins the spinner 10 times.

Here are his scores.

1 4 4 2 3 4 5 1 4 1

(a) Find the mode.

.....
(1)

(b) Work out the median.

.....
(2)

(c) Work out the median.

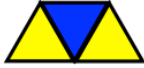
.....
(2)

(d) Work out the range.

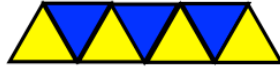
.....
(2)

11. SEQUENCES (videos 286, 287, 290)

Patterns are made from yellow and blue triangles.



Pattern 1



Pattern 2



Pattern 3

(a) How many yellow triangles are there in the n th pattern?

.....
(2)

(b) How many blue triangles are there in the n th pattern?

.....
(2)

(c) How many triangles, yellow and blue, are there in the 100th pattern?

.....
(2)

12. EXPANDING 2 BRACKETS (video 14)

Expand and simplify $(w - 2)(w - 7)$

.....
(2)

13. FACTORISING (video 117)

Factorise $2w^2 + w$

.....
(1)

14. FACTORISING QUADRATICS (video 118, 120)

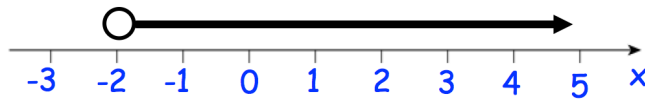
Factorise $x^2 - x - 30$

.....
(2)

15. INEQUALITIES (videos 177, 178, 179)

(a) Solve the inequality $2x - 1 < 9$

.....
(2)



(b) Write down the inequality shown on the number above

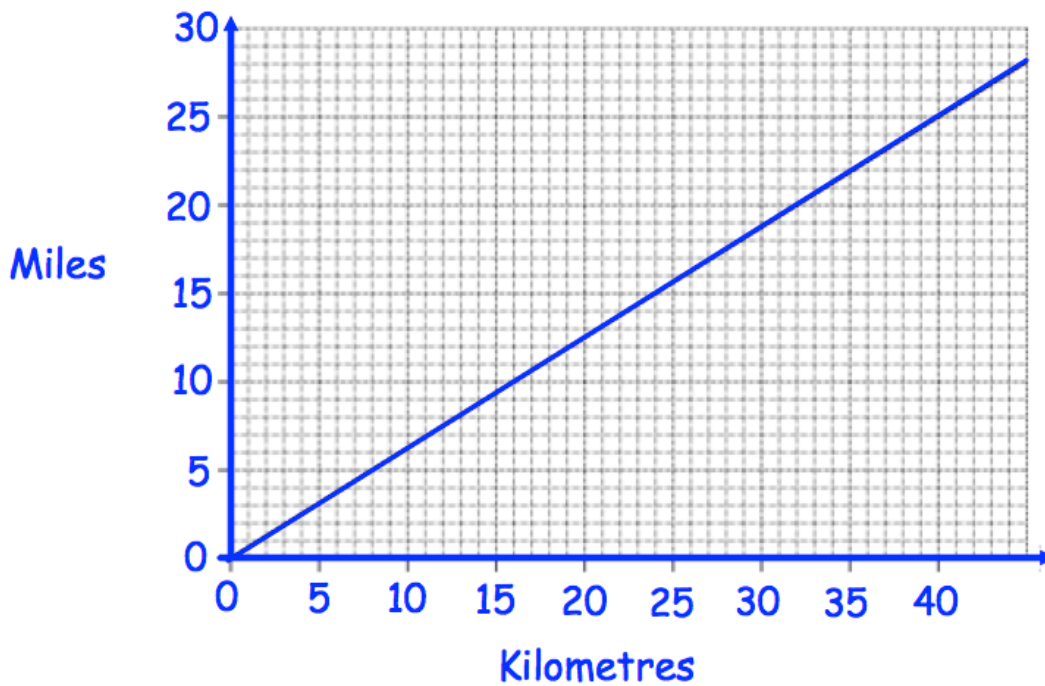
.....
(1)

(c) Write down **all** the integers that satisfy both inequalities shown in part (a) and (b).

.....
(1)

16. CONVERSION GRAPHS (video 151)

A conversion graph for kilometres and miles is shown.



(a) Use the graph to convert 40 kilometres to miles.

.....miles
(1)

(b) Use the graph to convert 10 miles to kilometres.

.....kilometres
(1)

(c) Convert 200 kilometres to miles.

.....miles
(2)

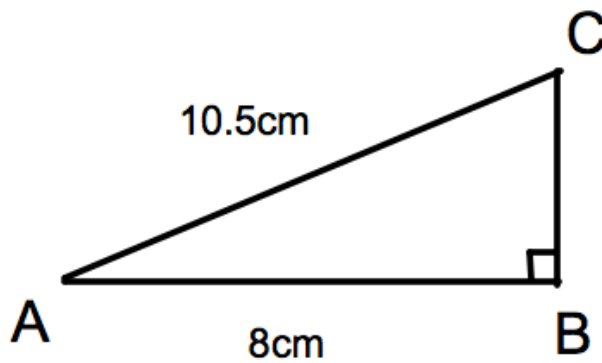
17. Express v in terms of t

$$t = \frac{v}{4} + 1$$

$v = \dots\dots\dots$
(2)

18. TRIGONOMETRY (video 329, 330, 331)

ABC is a right-angled triangle.



Calculate the size of angle ACB.

$\dots\dots\dots^{\circ}$
(3)

19. VENN DIAGRAMS (video 380)

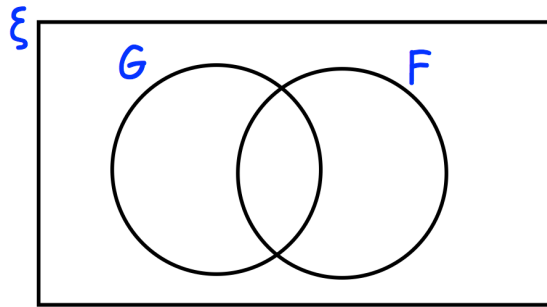
There are 80 students in year 11.

9 students study French and German.

35 students only study French

2 students do not study French or German.

(a) Complete the Venn diagram



(2)

(b) Work out how many students study only German.

.....
(1)

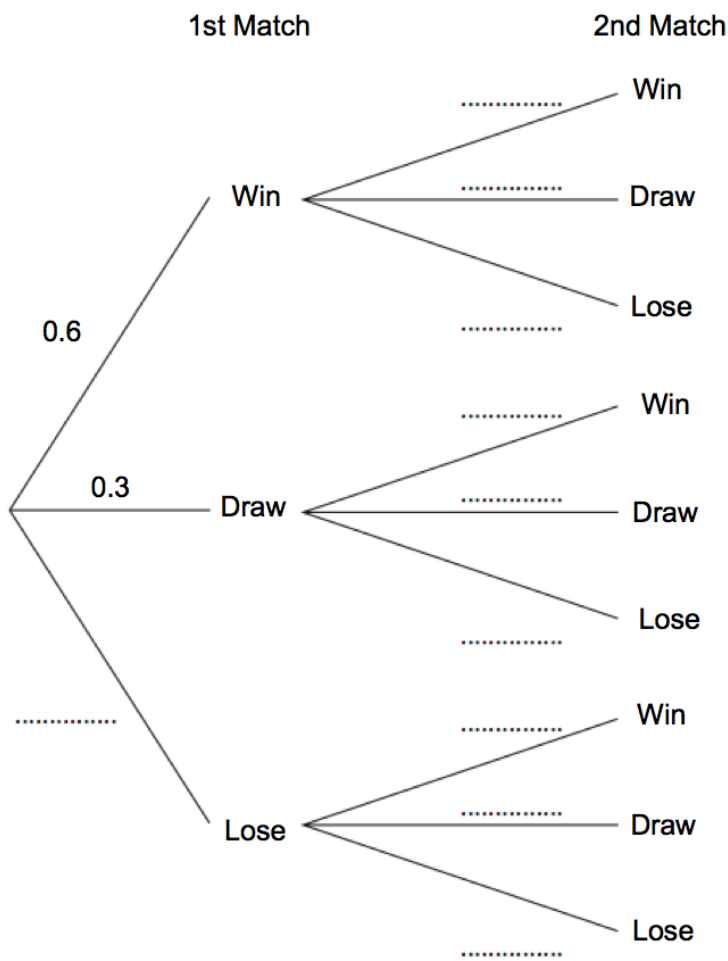
20. TREE DIAGRAMS (video 252)

A football team has two matches to play.

The probability that the team wins is 0.6.

The probability that the team draws is 0.3.

(a) Complete the tree diagram.



(2)

(b) Work out the probability that the team will win both matches.

.....
(2)

21. CURRENCY (Video 214a)

Kevin is going on holiday to Japan.
He wants to change some money into yen.

The bank only stocks ¥1000 notes.
James wants to change up to £300 into yen.
He wants as many ¥1000 notes as possible.

The exchange rate is £1 = ¥168

How many ¥1000 notes should he get?

.....
(3)

22. SIMULTANEOUS EQUATIONS (Videos 295, 298)

Solve the simultaneous equations

$$4x + 3y = 5$$

$$2x - 5y = 9$$

Do not use trial and improvement

$x = \dots\dots\dots y = \dots\dots\dots$
(4)

23. REVERSE PERCENTAGES (Video 240)

A fish tank sprung a leak and loses 45% of its water.
There is now 363 litres of water in the fish tank.

How much water was in the fish tank before the leak?

.....|
(3)

24. NTH TERM - LINEAR (video 288, 289)

The first 5 terms in a number sequence are

2 2.5 3 3.5 4

(a) Work out the n th term of the sequence.

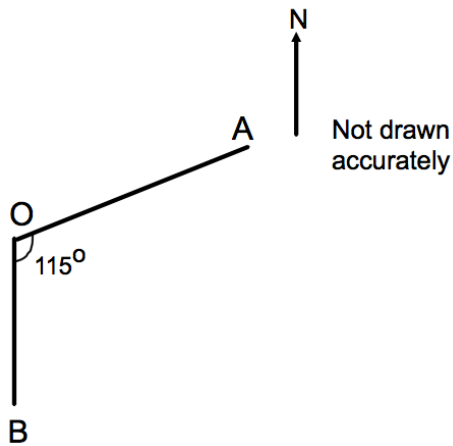
.....|
(2)

(b) Work out the 20th term of the sequence.

.....|
(2)

25. BEARINGS (videos 26, 27)

Gregory is at O and there are two roads, one towards A and another towards B. B is due South of O.



Gregory walks towards A.

(a) On what bearing does he walk?

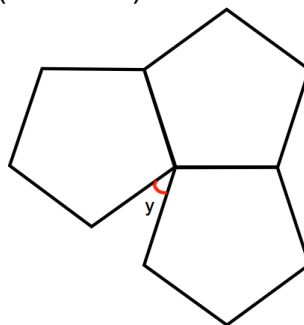
.....⁰
(2)

Joshua is at A and walks towards Gregory.

(b) On what bearing does he walk?

.....⁰
(2)

26. ANGLES IN POLYGONS (video 32)



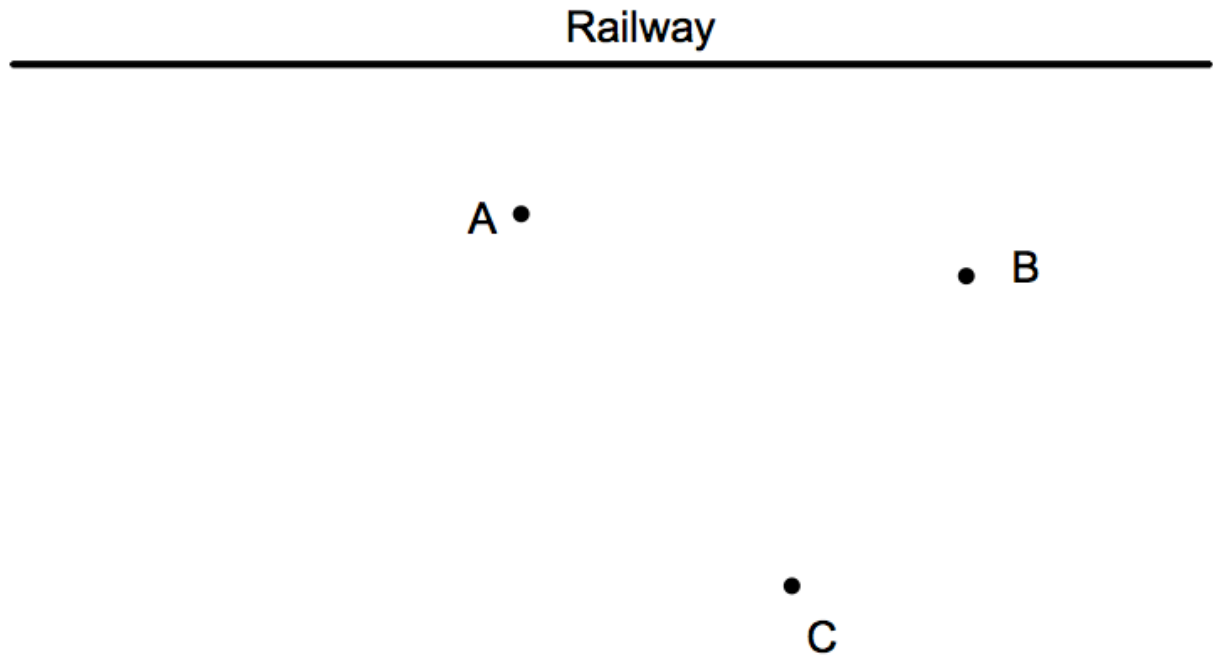
Three identical regular pentagons are joined as shown above.
Work out the size of angle y.

y =⁰
(2)

27. LOCI (videos 75, 76, 77)

A phone box is located near three houses, A, B and C.

$$1\text{cm} = 200\text{m}$$



The phone box is less than 500m from the railway track.
The phone box is between 300m and 500m from house A.
The phone box is closer to house C than house B.

Shade the region on the map where the phone box could be located.

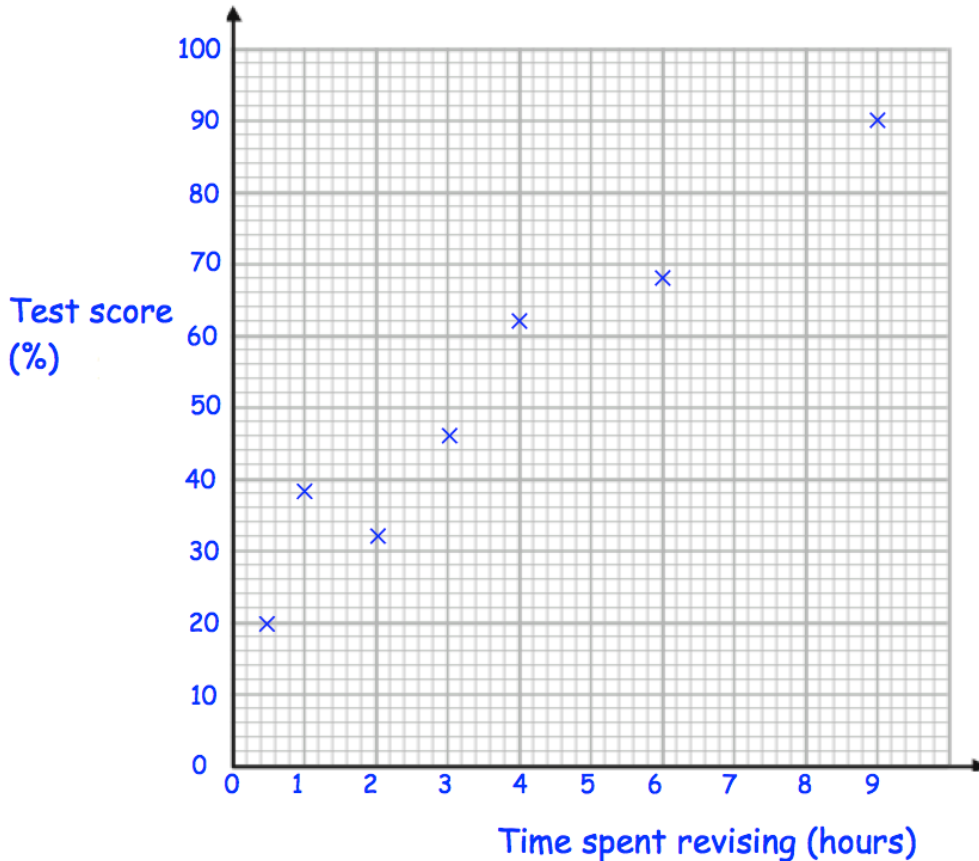
(5)

28. SCATTER GRAPHS (Video 165, 166)

The table shows the time spent revising and the test scores of ten students.

Time spent revising (hours)	9	0.5	1	4	6	2	3	7	5	8
Test result (%)	90	20	38	62	68	32	46	70	60	86

The first seven points have been plotted on this scatter diagram.



(a) Complete the scatter diagram. (1)

(b) Describe the relationship shown in the scatter diagram.

(1)

(c) Draw a line of best fit on your scatter diagram. (1)

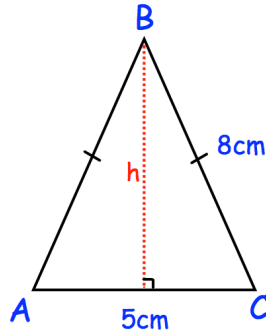
(d) Another student has spent 4.5 hours revising.
 Use your line of best fit to estimate their test result.
%
(1)

29. PYTHAGORAS (Video 257)

ABC is an isosceles triangle.

AB = BC = 8cm

AC = 5cm



Calculate the height of the triangle.

.....cm
(3)

30. STANDARD FORM

The King's Palace	5.4 million
Castle	923,840
Theme Park	1.43×10^7
Science Museum	4,192,900

(a) Write the number of visitors to the Theme Park as an ordinary number.

.....
(1)

(b) Write the number of visitors to the Castle in standard form.

.....
(1)