Pearson Edexcel
Level 1/Level 2 GCSE (9 - 1)

Centre Number

Candidate Number

Mathematics AO3

Specimen papers set 1
Bronze Test 1

Grades 5-6

Time: 30-45 minutes

Paper Reference
1MA1

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

Instructions

*   Use **black** ink or ball-point pen.
*   **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
*   Answer **all** questions.
*   Answer the questions in the spaces provided
    – *there may be more space than you need*.
*   **Calculators must not be used in questions marked with as asterisk (*).**
*   Diagrams are NOT accurately drawn, unless otherwise indicated.
*   You must **show all your working out** with your **answer clearly identified** at the **end of your solution**.

*

Information

*   This gold test is aimed at students targeting grades 5-6.
*   This test has 7 questions. The total mark for this paper is 28.
*   The marks for **each** question are shown in brackets
    – *use this as a guide as to how much time to spend on each question*.

Advice

*   Read each question carefully before you start to answer it.
*   Keep an eye on the time.
*   Try to answer every question.
*   Check your answers if you have time at the end.

1. *ABCD* is a trapezium.

B ——— 7 cm ——— C
5 cm
A ——— 9 cm ——— D
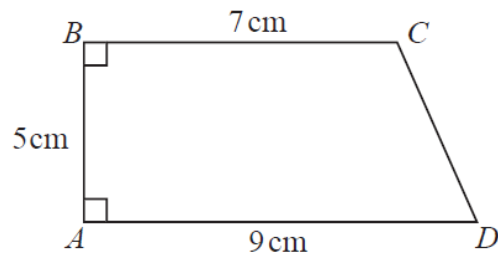
A square has the same perimeter as this trapezium.

(*a*) Draw a suitable right-angled triangle and use Pythagoras' theorem to find the length of *CD*.

.... cm

(2)

(*b*) Find the perimeter of the trapezium.

.... cm

(1)

(*c*) Find the length of one side of the square.

.... cm

2

(*d*) Work out the area of the square.
   Give your answer correct to 3 significant figures.

.... cm^2

(2)

(Total for Question 1 is 5 marks)

*2. Walkden Reds is a basketball team.

At the end of 11 games, their mean score was 33 points per game.
At the end of 10 games, their mean score was 2 points higher.

Jordan says,

"Walkden Reds must have scored 13 points in their 11th game."

(*a*) Find the total number of points Walkden Reds scored in 11 games.

....

(*b*) Write Walkden Reds' mean score at the end of 10 games.

....

(*c*) Find the total number of points Walkden Reds scored in 10 games.

....

(1)

(*d*) Is Jordan right?
      Justify your answer.

....

....

(2)

(Total for Question 2 is 3 marks)

3. The densities of two different liquids A and B are in the ratio 19 : 22

The mass of 1 cm^3 of liquid B is 1.1 g.

(*a*) Write the density of liquid B.

.... g/cm^3

(*b*) Use the ratio to find the density of liquid A.

.... g/cm^3

(1)

5 cm^3 of liquid A is mixed with 15 cm^3 of liquid B to make 20 cm^3 of liquid C.

(*c*) Use your answer to part (b) to find the mass of 5 cm^3 of liquid A.

.... g

(*d*) Use your answer to part (a) to find the mass of 15 cm^3 of liquid B.

.... g

(*e*) Use your answers to part (c) and (d) to find the mass of liquid C.

.... g

(1)

(*f*) Work out the density of liquid C.

....g/cm^3

(2)

(Total for Question 3 is 4 marks)

4.   Ian invested an amount of money at 3% per annum compound interest.
At the end of 2 years the value of the investment was £2652.25.

(*a*) Write down the multiplier you can use to find the value of Ian's investment after 1 year.

....

(*b*) Let x = the amount of money Ian invested.
Write a formula connecting x and the value of Ian's investment after 2 years.

....
(1)

(*c*) Solve your equation to find the amount of money Ian invested.

£...
(2)

Noah has an amount of money to invest for five years.

Saver Account	Investment Account
4% per annum compound interest.	21% interest paid at the end of 5 years.

Noah wants to get the most interest possible.

(*d*) Write down the multiplier you can use to find the value of Noah's investment after 1 year in the Saver Account.

....

(*e*) Write down the multiplier you can use to find the value of Noah's investment after 5 years in the Saver Account.

....

(*f*) Hence express the total interest Noah would earn if he invested his money in the Saver Account for 5 years as a single percentage of his original investment.

....%
(1)

(*g*) Compare your answer to part (e) with the interest Noah would get in the Investment Account.
Which account is best?
Justify your answer.

....

....
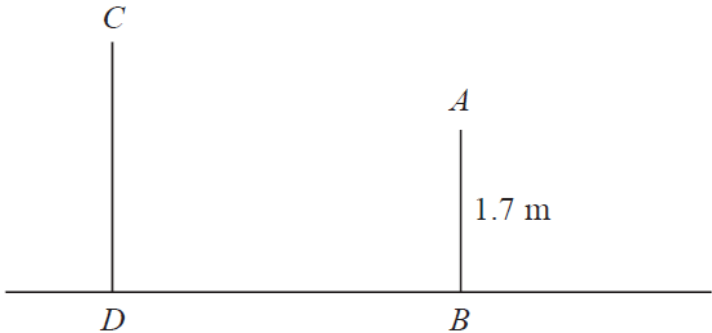**(1)**

(Total for Question 4 is 5 marks)

5. The diagram shows two vertical posts, *AB* and *CD*, on horizontal ground.

AB = 1.7 m
CD : *AB* = 1.5 : 1

The angle of elevation of *C* from *A* is 52°

(*a*) Work out the height of *CD*.

.... m

(*b*) Work out the difference in height between *AB* and *CD*.

.... m
(1)

10

(*c*) Draw a right-angled triangle showing the difference in height between *AB* and *CD*, the length *DB* and the angle of elevation of *C* from *A*.

(*d*) Write a trigonometric equation connecting the difference in height between *AB* and *CD*, the length *DB* and the angle of elevation of *C* from *A*.

....
(1)

(*e*) Solve your equation to find the length of *BD*.
Give your answer correct to 3 significant figures.

....m

(2)

(Total of Question 5 is 4 marks)

*6. Sean drives from Manchester to Gretna Green.

He drives at an average speed of 50 mph for the first 3 hours of his journey.

He then has 150 miles to drive to get to Gretna Green.
Sean drives these 150 miles at an average speed of 30 mph.

(*a*) Work out how far Sean drives in the first 3 hours of his journey.

.... miles

(1)

(*b*) Work out how long it took Sean to drive the remaining 150 miles to Gretna Green.

.... hours

(1)

(*c*) Work out how far Sean drives in total.

.... miles

(*d*) Work out how long Sean's journey took in total.

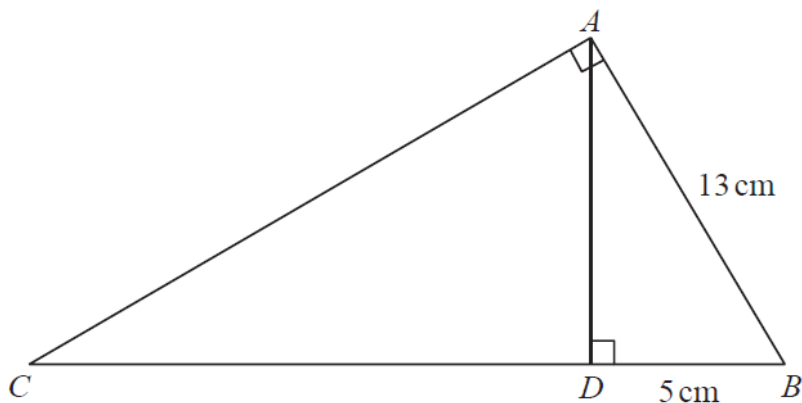... hours

Sean says,

"My average speed from Manchester to Gretna Green was 40 mph."

(*e*) Use your answers to parts (c) and (d) to decide if Sean is right.
Justify your answer.

....
....

(2)

(Total for Question 6 is 4 marks)

7. *ABC* and *ABD* are two right-angled triangles.

Angle *BAC* = angle *ADB* = 90°

AB = 13 cm
DB = 5 cm

(a) Sketch triangles *ABC* and *ABD* separately. Mark on the given lengths and identify any equal angles.
What can you say about triangles *ABC* and *ABD*?

....

(1)

(b) The ratio of *AB* to *DB* can be written as 13 : 5.
Write the ratio of *CB* to *AB* and hence work out the length of *CB*.

.... cm

(2)

(Total for Question 7 is 3 marks)

TOTAL FOR PAPER IS 28 MARKS

Question	Origin	Question	Origin
1	2F qu.28	5	3H qu.9
2*	1H qu.9	6*	1H qu.12
3	3F qu.28	7	2H qu.14
4	3H qu.8		

Specimen papers set 1 problem solving:			Gold Test Grades 5-6
Question	Working	Answer	Notes
1 (a) (b) (c)-(d)		43.5	P1 For process to establish a right-angled triangle with two sides of 5 cm and 9 – 7 = 2 cm P1 For correct application of Pythagoras, eg. $5^2 + "2"^2$ P1 for a complete process to find perimeter, eg. 9 + 7 + 5 + "5.39" (= 26.385…) P1 for process to find area of square, eg. $(26.385… \div 4)^2$ A1 for answer in range 43.5 to 43.6
2 (a)-(c) (d)		'Yes' with correct working	P1 begins process of working with mean eg 35×10 (=350) or 33×11 (=363) or 10×(35–33) (=20) or 11×(35–33) (=22) P1 (dep) finding the difference eg "363"–"350", or 33 – "20" or 35 – "22" C1 'Yes' with 13 from correct working
3 (a)-(b) (c)-(e) (f)		1.0625	P1 for a complete process to find the density of liquid A P1 for a complete process to find the mass of liquid C P1 for a complete process to find the density of liquid C A1 cao
4 (a)-(b) (c) (d)-(f) (g)		2500 Saver account with support	P1 for use of 1.03 P1 for a full method equivalent to $\div 1.03^2$ A1 2500 P1 process to find a comparable total interest figure A1 for conclusion with supporting statement eg 21.(665..)>21

Specimen papers set 1 problem solving:			Gold Test Grades 5-6
Question	Working	Answer	Notes

5   (a)-(b)
    (c)-(d)
    (e)
		0.664(09..)	P1 for finding the difference in height by ratio or multiplier
			P1 for use of tan ratio
			P1 (dep) for 0.85÷tan52
			A1 awrt 0.664

6   (a)
    (b)
    (c)-(e)
		37.5 mph	P1 shows process of finding first distance eg 50 × 3 (=150)
			P1 shows process of finding time for second part eg 150 ÷ 30 (=5 h)
			P1 shows process of working with av sp. (dist ÷ time) (= 300÷(3+5) = 300÷8)
			C1 conclusion with supporting evidence, correct notation and units eg 37.5 mph

7 (a) (b)		33.8	P1 for recognition of similar triangles or equal ratio of sides P1 for process to find CB, eg. $\frac{5}{13} = \frac{13}{CB}$ A1 for 33.8