

SCHOLARSHIP EXAMINATION

MATHEMATICS

2013

Time: 1 hour

Name:

School:

Non Calculator





wo shops both sell the same type of suit. n both shops the price of the suit was £180	
One shop increases the price of the suit by $17\frac{1}{2}$ %.	
The other shop increases the price of the suit by $22\frac{1}{2}$ %.	
Calculate the difference between the new prices of the suits in the two shops.	
£	
	(3)
Wiers cost r pence each. Write down an expression for the total cost, in pence, of 2 compasses and 4 ru	llers.
Write down an expression for the total cost, in pence, of 2 compasses and 4 ru	llers. . pence (2)
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4. (a) Complete the table of values for y = 4x - 3

x	-2	-1	0	1	2	3
У	-11		-3			9

(b) On the grid, draw the graph of y = 4x - 3, for values of x from -2 to 3



(2)

(2)



5.
$$P = 4k - 10$$

P = 50

(a) Work out the value of *k*.

y = 4n - 3d

n = 2 d = 5

(b) Work out the value of y.

6. (a) Work out
$$\frac{2}{3} + \frac{4}{5} \times \frac{1}{2}$$

(b) Work out 423 × 12

You must show all your working.



.....

.....

.....

(2)

(2)

(3)

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7. 30 students took a test.

The table shows information about how long it took them to complete the test.

Time (<i>t</i> minutes)	Frequency
$0 < t \le 10$	5
10 < <i>t</i> ≤ 20	7
20 < <i>t</i> ≤ 30	8
30 < <i>t</i> ≤ 40	6
40 < <i>t</i> ≤ 50	4

(a) On the grid, draw a frequency polygon for this information.





- 8. Triangle P has been drawn on a grid.
 - (a) On the grid, draw an enlargement of the triangle **P** with scale factor 3

(2)



9. Write down the value of 5⁰

.....(1)



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11. Use the information that

	322 × 48 = 15	450
to fi	ind the value of	
(a)	3.22 × 4.8	
		(1)
(b)	0.322 × 0.48	
		(1)
(c)	15 456 ÷ 4.8	
		(1)
	$2x^2 = 2$	
(a)	Find a value of <i>x</i> .	
		(2)
(b)	Express 72 as a product of its prime factors	5.

Page 8 of 14 Calculator <u>NOT</u> Permitted **13.** Batteries are sold in packets and boxes.

Each packet contains 4 batteries. Each box contains 20 batteries.

Bill buys *p* packets of batteries and *b* boxes of batteries.

Bill buys a total of *N* batteries. Write down a formula for *N* in terms of *p* and *b*.



	(3)

14. There are 40 litres of water in a barrel.

The water flows out of the barrel at a rate of 125 millilitres per second.

Work out the time it takes for the barrel to empty completely.

..... seconds (3)





The bearing of B from A is 060° calculate the bearing of A from B.

。° (2)



(a)	Expand y(2y – 3)	
(b)	Factorise x ² – 4x	(1)
(c)	Expand and simplify $2(x + 3) + 3(2x - 1)$	(2)
(d)	Solve 3(<i>x</i> + 2) = 8	(2)
		x =(2)
	(a) (b) (c)	 (a) Expand y(2y - 3) (b) Factorise x² - 4x (c) Expand and simplify 2(x + 3) + 3(2x - 1) (d) Solve 3(x + 2) = 8









20.
$$\frac{1}{v} + \frac{1}{u} = \frac{1}{f}$$

 $v = 2\frac{1}{2}, \quad u = 3\frac{1}{3}$

(a) Find the value of *f*.

(3)

END OF PAPER

