DIRECTORATE FO Department for Currie Educational Assessme Annual Examination	R QUALITY AND STANDARDS IN EDUCATION culum Management and eLearning ent Unit ns for Secondary Schools 2012	StudentBounts
FORM 5	MATHEMATICS SCHEME B Non Calculator Paper	TIME: 20 minutes
Name:		Class:
	Mark	

INSTRUCTIONS TO CANDIDATES

- Answer all questions. There are 20 questions to answer.
- Each question carries 1 mark.
- Calculators, protractors and other mathematical instruments are not allowed.
- You are not required to show your working. However space for working is provided if you need it.

		Studen	
No.	Question	Space for Working	
1	A bag contains 2 kg of flour. A recipe uses 300 g of flour. Using only one bag of flour, how many times can the recipe be made?		4.0
	times		
2	Write down the value of <i>n</i> , given that		
	$2^{n} = 32$		
	n =		
3	What is the size of the obtuse angle between the hands of a clock at half past ten ?		
	°		
4	Write 45 minutes as a percentage of one hour.		
	%		
5	Work out: $2 - \frac{2}{z}$		
	5 Answer :		
6	Find p and q given that		
	$200 = 2^p \times 5^q$		
	<i>p</i> =, <i>q</i> =		
7	The circumference of a circle is equal to 24 cm. Underline the best estimate for the radius.		
	A . 4 cm B . 6 cm C . 8 cm D . 12 cm		

		Students
No.	Question	Space for Working
8	A sum of money is divided in the ratio $2:3:5$. The smallest share is $\notin 24$. What is the sum of money?	
9	Work out the total area of the two rectangles.	
	Area = $_\ cm^2$	
10	A euro is approximately equal to $\pounds 0.80$. How much do I get for $\pounds 200$?	
	£	
11	A car travels at an average speed of 60 km/h for 3 ¹ / ₂ hours. How far does it travel?	
	km	
12	Given that $f(x) = 2x - 5$, work out the value of x if $f(x) = 8$. $x = ___$	
13	Underline the point that passes through the line whose equation is $y = 3x - 2$. A(-2, -4) $B(2, 4)$ $C(2, -4)$ $D(-2, 4)$	
14	Work out the value of $(0.4)^2 \times 1000$. Give your answer in standard form .	
	Answer:	

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		THEERE
No.	Question	Space for Workin
15	Divide 690 by 23.	
	Answer:	
16	Underline the number which is equal to $\frac{1}{4}$. A . 4% B . 0.4 C . 40% D . 4 ⁻¹	
17	Underline the number of positive factors of 12. A. 4 B . 5. C . 6 D . 7	
18	The perimeter of a rectangular field is 40 m. The length is three times the width. Work out the area of the field.	
	Area = $_$ m ²	
19	Work out the gradient of a line that passes through $(6, -2)$ and $(1, 8)$.	
	Gradient =	
20	Write 60% as a fraction in its lowest terms.	
	Answer:	

С

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1	2	3	4	5	6	7	8	9	10	11	12	13	NC	Main	Total

Name: _____

Class: ____

Calculators are allowed but the necessary working must be shown. Answer all questions.

1 Pawlu bought a car in January 2009 for €15 600. The price of the car decreased by 8% in 2009 and by 12% in 2010. Work out the price of the car on 31 December 2010. Give your answer correct to the **nearest euro**.

(3 marks)

- 2 Karmenu uses a spreadsheet to work out the simple interest.
 - (a) Write the **formula** which Karmenu types in
 - cell B4 = (i)
 - (ii) cell B5 =
 - (b) What output will Karmenu get in **cell B5**?

		Α	В	С
1	I	Sum invested (€)	4600	
2	2	Rate (%)	3.5	
3	3	Time (years)	4	
4	Ļ	Interest (€)		
5	5	Amount (€)		

€__

(4 marks)

- **3** The formula $V = \frac{\pi r^2 h}{3}$ is used to find the volume of a cone.
 - (a) Work out the volume of a cone when r = 3.2 cm and h = 5.7 cm. (Give your answer correct to 3 significant figures.)

Volume = $_$ cm³

(b) Make *r* the **subject of the formula**.

(4 marks)

r = _____

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4 The equation of a straight line, L, is 4x = 2y + 3.

(a) Write down the **gradient** and the *y*-intercept of this straight line.

gradient = _____

y-intercept = _____

(b) The line passes through the point A(2, b). Write down the value of b.

b = _____

(c) Another straight line is parallel to L and passes through the point B(0, -5). Write down the equation of this straight line.

Equation of line: _____

(5 marks)

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(b) The sides of a triangle have length 5 cm, 6 cm and 8 cm. The longest side of a similar triangle is 12 cm. Work out the length of the other two sides of this triangle.

_____ cm

_____ cm

6 AB is a chord of a circle with centre O. OM is drawn **perpendicular** to AB.



(a) Prove that M is the **midpoint** of AB.

(b) C is a point on the circumference of the circle. OA = 6.2 cm and AB = 9.6 cm. Work out the size of $\angle AOB$ and $\angle ACB$ correct to **1 decimal place**.

 $\angle AOB = ____^\circ$

 $\angle ACB = ____^{\circ}$

(8 marks)

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Name:	Class:
 <i>x</i> and <i>y</i> represent two numbers, represent the following statement (a) The sum of <i>y</i> and double <i>x</i> (b) The difference between the following statement 	<i>x</i> being larger than <i>y</i> . Write down two equations to ents. <i>x</i> is 4. The two numbers is 5.
(c) Hence solve the two equat	tions.
	<i>x</i> =
	x = y =
(a) The diameter of an atom is	x = y = (6 marks) s 0. 000 000 25 cm. Write this in standard form .
(a) The diameter of an atom is	x = y = (6 marks) s 0. 000 000 000 25 cm. Write this in standard form . cm
 (a) The diameter of an atom is (b) The speed of light is 3.0 × 	x = y = (6 marks) s 0. 000 000 000 25 cm. Write this in standard form . cm $\pm 10^5$ kilometres per second.

(ii) The distance of the Earth from the Sun is 148 800 000 km. Work out the time taken for light from the Sun to reach the earth. Give your answer correct to the nearest minute.

_____ minutes



(b) One of the graphs below shows the cost of printing posters. The cost consists of a fixed charge and an additional charge for each poster printed.



Fill in with **A**, **B**, **C** or **D**.

Graph _____ best describes the cost of printing the posters.

10 A boat, **S**, is 45 km South of a lighthouse, **L**. The boat sails to **X**, on a bearing the lighthouse.



(a) Work out the **distance** SX. (Give your answer correct to **3 decimal places**.)

SX = _____ km

(b) Work out the **bearing** of **S** from **X**.

0

ECF is a tangent to a circle with centre O.A, B, C and D are points on the circumference of the circle.



(a) Explain why $\angle ABC = 90^{\circ}$.

(b) Work out the size of angles *p*, *q* and *r*. Give **reasons** for your answers.



(7 marks)

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- Use ruler, compasses and pencil to 12
- StudentBounts.com (a) construct a triangle ABC in which AB = 8 cm, AC = 6 cm and BC = 9 cm.



- Construct the **bisector** of $\angle ABC$. (b)
- Construct the line through A, perpendicular to BC. Mark the point X where this (c) line meets the bisector of $\angle ABC$.
- (d) Measure the length CX.

CX = _____ cm

(9 marks)

StudentBounty.com 13 A survey was carried out to find what 180 students did after they finish (a) secondary school. These were the results.

MCAST	54
Junior College	36
Higher Secondary	45
Employment	29
Unemployed	16

(i) Draw a **pie chart** to show the information above.



- What **percentage** of the students went to Higher Secondary? (ii) %
- The mean mass of 12 boys is 52 kg. The mean mass of 15 girls is 44 kg. (b) Work out the total mass of the 12 boys. (i)

Total mass = _____ kg

(ii) Work out the mean mass of the 27 children. (Give your answer correct to the nearest kilogram.)

Mean mass = _____ kg

(10 marks)

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