# Primary Mathematics Challenge Bonus Paper

**Wednesday 1st February 2012**

Name ..... Class .....

Please do **NOT** start to answer questions until you are told to do so. When you do turn over the page you will have 45 minutes for the challenge.

You must do all the work on your own. You should use rough paper for your working out.

Write down A B C D or E in the space for each answer. When you have finished, **use a B or an HB pencil** to copy your answers onto the OMR sheet which will be sent to the MA office for marking.

Correct answers to all questions get one mark each.

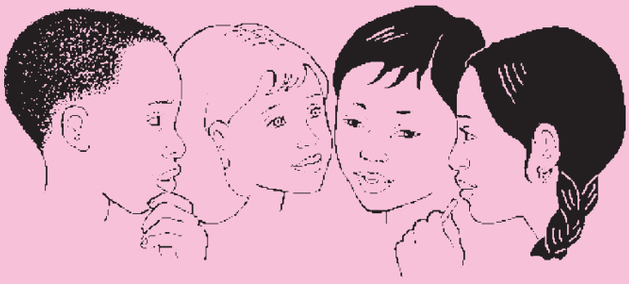
## Practice Questions

P1 Which word is best to describe the probability that you could eat a thousand hard boiled eggs in one minute?

A impossible B unlikely C possible
D likely E certain

P2 Milly is 6, Molly is 8, Mummy is 38 and Daddy is 36. In how many years' time will their ages total 100?

A 2 B 3 C 4 D 5 E 6



MATHEMATICAL ASSOCIATION
supporting mathematics in education

*The Primary Mathematics Challenge is organised by:*
The Mathematical Association
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# Primary Mathematics Challenge Bonus Paper 2012

**1** Which of these is not a factor of 2012?

A 2 B 4 C 8 D 503 E 1006

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**2** Sue has 3 horses who each drink 9 gallons of water a day. When the taps froze in their field, she had to drive to them, taking their water in 4-gallon containers. She only has 3 of these. How many trips in her car did she have to make each day?

A 1 B 2 C 3 D 4 E 5

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**3** Jack is 3 years older than Jill. The sum of their ages is 25. What is the product of their ages?

A 25 B 144 C 150 D 154 E it's impossible to say

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**4** Which of the following is a square AND a cube number?

A 4 B 8 C 9 D 27 E 64

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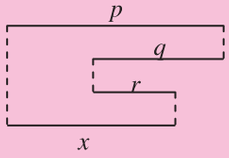
**5** The dotted lines are vertical and the other lines are horizontal. Which formula calculates the length of the line marked $x$?




A $p-q-r$ B $p-q+r$ C $p+q-r$
D $p+q+r$ E $q+r-p$

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**6** This year, the first 'Friday the Thirteenth' fell in January. When will the next 'Friday the Thirteenth' fall?

A February B March C April D May E June

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**7** The River Nile in Africa is 6650 km long, whereas the Roe River in Montana, USA is a mere 61 metres. Approximately how many times longer is the Nile than the Roe?

A 100 B 1000 C 10 000 D 100 000 E 1 000 000

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**8** The school inspector checks the attendance records and discovers that Marcus Absent has only been at school for 80% of the time. If the school year has 190 days, how many school days has he missed? (1 week = 5 school days)

A 19 days B 20 days C 7 weeks, 3 days
D 19 weeks E 38 weeks

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**9** Which of these shapes has the most edges?

A tetrahedron B cube C square-based pyramid
D hexagonal prism E octahedron

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**10** Saskia's rose bed measures 3 metres by 1 metre. Amy's rose bed is three times as long, but a third as wide. What is the area of Amy's rose bed?

A $2\ m^2$ B $3\ m^2$ C $3.5\ m^2$ D $4\ m^2$ E $6\ m^2$

**11** John was 13 when the last London Olympics took place in July 1948. How old will he be in July 2012 at the opening ceremony of the next London Olympics?

A $\frac{3}{4}$ of a century – 1 year B 6 decades + 1 year C 6 decades –1 year
D $\frac{4}{5}$ of a century – 3 years E $\frac{1}{2}$ of a century + 1 year

**12** Suppose that a doctor in Jabbemall Hospital gets £10 for every 20 flu injections given to patients. At present he can give 2 injections a minute. If he increases his speed to 36 injections per minute, how much could he earn in 20 minutes?

A £20 B £40 C £80 D £200 E £360

**13** What is the value of $n$ if $\sqrt{16} + \sqrt{n} = 8$?
(remember $\sqrt{\ }$ means square root)

A 1 B 2 C 4 D 8 E 16

**14** Which of the following cannot be an odd number?

A a prime number B a multiple of 3 C a square number
D a multiple of 30 E a factor of 3

**15** Which of the following is the largest?

A $654 \div (33 + 1)$ B $654 \div (3 + 21)$ C $654 \div (32 \times 1)$
D $654 \div (32 - 1)$ E $654 \div 321$

**16** Aunty Histamine needs to take 15 ml of medicine 3 times a day for 2 weeks. How much medicine will she have taken when she has finished?

A 42 ml B 210 ml C 315 ml D 500 ml E 630 ml

**17** Julian is 34 days older than Kylie, and Kylie is 43 days older than Luigi. This year Julian's birthday is on a Wednesday in June. On what day is Luigi's birthday this year?

A Monday B Tuesday C Wednesday
D Thursday E Friday

**18** Chris Packitt did a survey of favourite flavours of crisps and drew a pie chart of her results. The sector of the chart representing smoky bacon had an angle of exactly 45°. Which of these could **not** have been the total number of people in the survey?

A 16 B 20 C 32 D 64 E 96

**19** Usain Bolt holds the Olympic record for the 200 m at 19.3 seconds. If he can improve his time in the 2012 Olympics by 2%, what would be his new time?

A 0.386 sec B 15.44 sec C 18.914 sec
D 19.107 sec E 19.686 sec

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**20** In a park I can see people and dogs out for walk. I see 13 noses and 36 legs. How many tails are there in the park?

A 5 B 8 C 13 D 20 E 49

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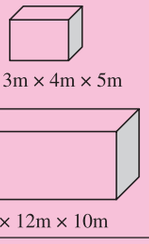
**21** Here are two water tanks. A water pipe can fill the smaller tank in 20 minutes. How long would it take to fill the larger tank?




A 40 min B 60 min C 90 min D 2 hours
E 4 hours

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**22** Karl Lecter has been collecting 1p, 2p and 5p coins in a jar. All but 10 of his coins are 1p coins, all but 10 are 2p coins, and all but 10 are 5p coins. How much money does he have?

A 8p B 10p C 25p D 40p E 80p

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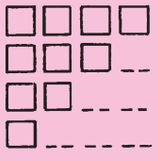
**23** Jemima had some identical square cards. She had fewer than 200 altogether. She tried to arrange them in rows of 4 but had 1 left over. She tried rows of 5 and then rows of 6, but each time she had one card left. Finally she discovered that she could arrange them to form one large solid square. How many cards were on each side of the square?



A 7 B 8 C 9 D 10 E 11

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**24** If I write all the whole numbers from 1 to 100 in words, how many times will I write the letter V?

A 19 B 29 C 30 D 31 E 32

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**25** I have five coloured plates in a pile as shown. I take the top two plates and put them under the bottom plate (with the red still above the blue plate). Then I again take the top two plates and put them at the bottom. If I do this operation a total of 21 times, what colour plate will be in the middle?


A red B blue C green D yellow E orange

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