ST EDWARD'S OXFORD

Maths

13+ ENTRY INTO YEAR 9 ENTRANCE EXAM

2012

Name: _____

There are 60 marks available.

Calculators are NOT allowed.

Write all answers, including your workings, in this booklet.

Time allowed: 1 hour

1. You can buy a new calculator for £1.25. In 1979 the same calculator cost 22 times as much as it costs now.

How much did it cost in 1979?

[2]

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2. **a)** A bag has 20 cubes in it. 6 of the cubes are green. You take a cube at random and put it back in the bag. What is the probability that the cube is NOT GREEN?

[1]

b) I now add 4 more green cubes to the bag. What is the probability that I take out a green cube?

[2]

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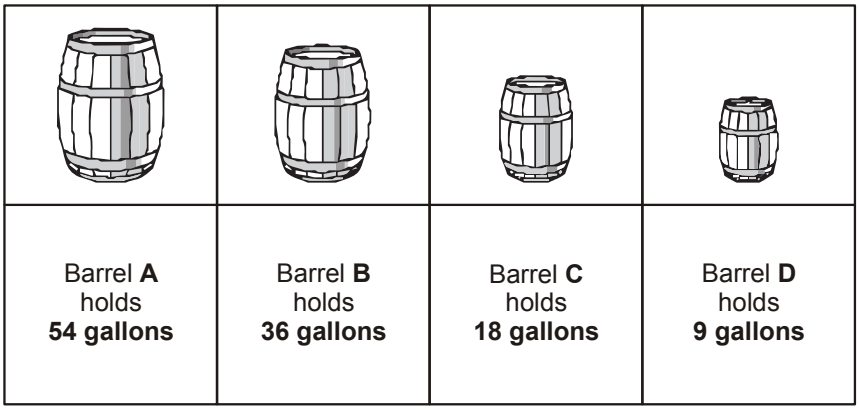
3. Calculate 57.3×2.1.

You must show working.

[2]

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4. The diagram shows four different sized barrels.



Barrel **A** holds **54 gallons**	Barrel **B** holds **36 gallons**	Barrel **C** holds **18 gallons**	Barrel **D** holds **9 gallons**

Write the missing fractions **as simply as possible**. The first one is done for you.

Barrel **C** holds $\frac{1}{2}$ of the amount barrel **B** holds.

Barrel **D** holds ..... of the amount barrel **B** holds.

Barrel **C** holds ..... of the amount barrel **A** holds.

Barrel **B** holds ..... of the amount barrel **A** holds.

[3]

5. A fruit drink is made by mixing the following quantities:

Orange $\frac{1}{2}$ litre

Cranberry $\frac{1}{3}$ litre

Grape $\frac{1}{6}$ litre

How much of each type of juice is needed to make $1\frac{1}{2}$ litre of the same drink?

[2]

6. Put these numbers in order, smallest first: $\frac{1}{4}$ 0.8 $\frac{3}{20}$

[2]

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7. Work out the following.

a) $\frac{3}{10} \times \frac{5}{7}$

b) $\frac{5}{8} + \frac{3}{4}$

c) $1\frac{1}{3} - \frac{1}{5}$

d) $\frac{3}{5} \div \frac{4}{10}$

[8]

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8. a) How many quarters are there in $1\frac{1}{4}$

b) How many tenths in $3\frac{3}{10}$

c) How many tenths in $3\frac{3}{5}$

[3]

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9. Calculate the following:

1.5×1000 ……

$150 \div 0.1$ ……

$0.15 \div 0.01$ ……

15×0.001 …….

[4]

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10. Look at the list of numbers here:

-7 -5 -3 -1 0 2 4 6

a) Which three numbers when added together will make the **lowest** possible total? You must not use the same number twice, and you must give the total.

……. + …… + …….. = …….

[2]

b) Which two numbers when multiplied together will give the **biggest** possible total?

…….. × …… = ……..

[2]

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11. A car travels at 24 km/hour. How far does it travel in 45 minutes? Give your answer in km.

[2]

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12. Anna, Bertie and Chris split £240 between them in the ratio 1:2:3. How much does each get?

Explain why they cannot split the money exactly if they use the ratios 2:2:3?

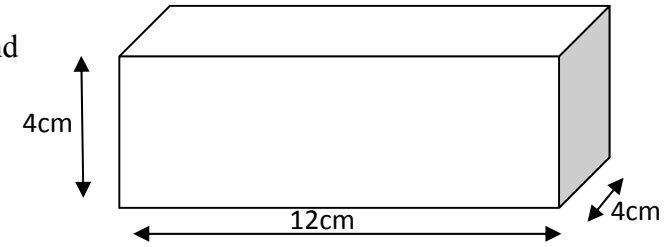
[3]

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13. **a**) What is the volume of a cube with side length 5cm?

[1]

b) This cube is 12cm long, 4cm wide and 4cm high. What is the surface area?



[3]

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14. Multiply out and simplify these expressions:

$7 + 2t + 3t$

[1]

$3(x - 2) - 2\,(4 - 3x)$

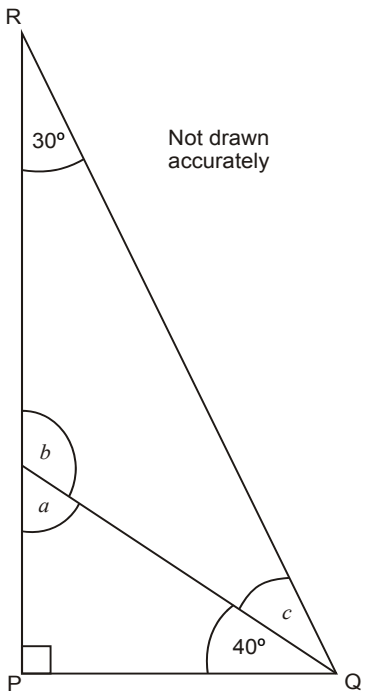
[2]

$3m - (-m)$

[1]

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15. The diagram shows triangle PQR.



Work out the sizes of angles *a*, *b* and *c*

a = ……° *b* = ……°

c = ……°

[3]

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16. Solve these equations.

a) $7k - 1 = 20$

[1]

b) $3(m + 1) = 60$

[2]

c) $8t - 3 = 2t + 1$

[2]

d) $\frac{3x}{5} = 12$

[2]

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17. a) Find values of k and m to satisfy these statements:

$4^k = 64$ $2^m = 64$

k = ……

m = ……..

[2]

b) Which of these numbers is not a square number? Explain your reasoning:

3^4 4^5 4^8 5^4

[2]

END OF TEST