

NUMBERS

Decimals

Using calculator

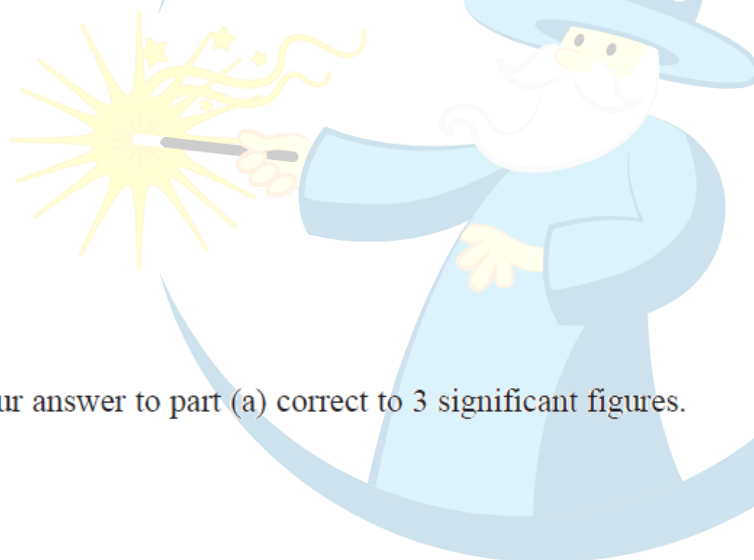
1. June 2017 (3H) Q5

(a) Use your calculator to work out the value of

$$\frac{7.3 + 2.1}{6.4} + 2.2^2$$

Give your answer as a decimal.

Write down all the figures on your calculator display.

.....
(2)

(b) Give your answer to part (a) correct to 3 significant figures.

.....
(1)**(Total for Question 5 is 3 marks)**

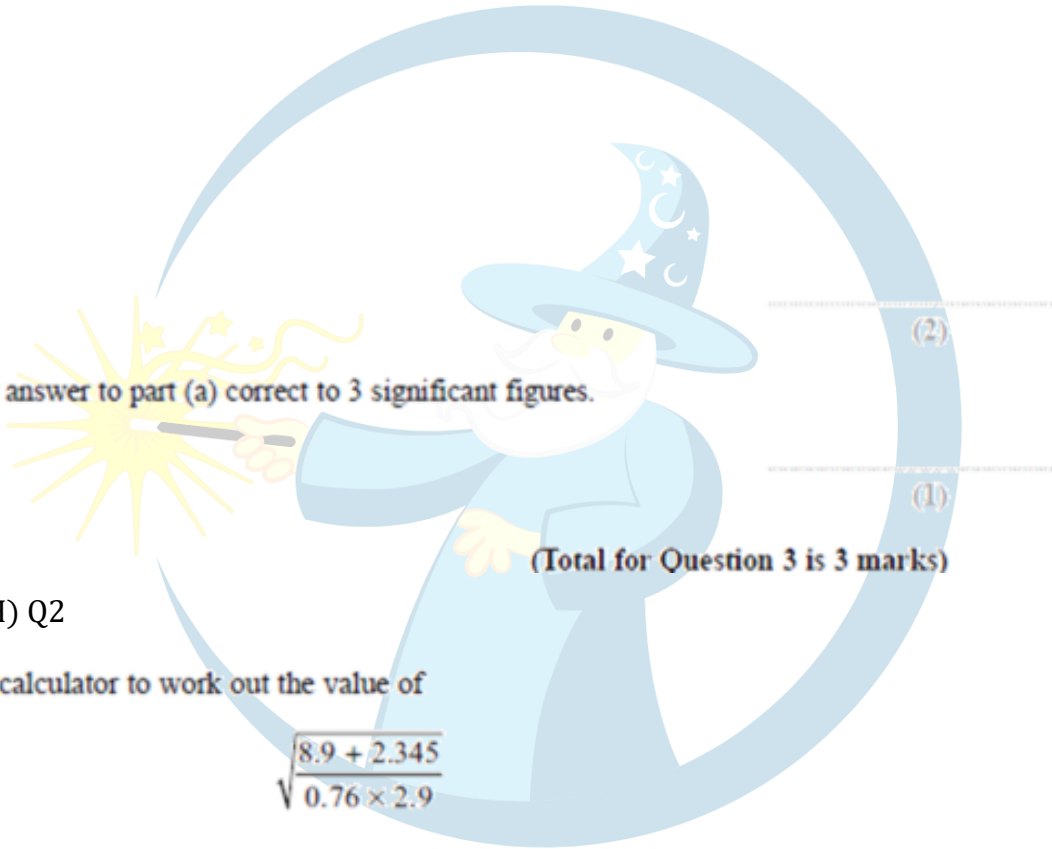
British Math

2. June 2017 (4HR) Q3

(a) Work out the value of $\frac{17.7 \times 5.8}{\sqrt{3.4 + 5.3}}$

Write down all the figures on your calculator display.

(b) Give your answer to part (a) correct to 3 significant figures.



(Total for Question 3 is 3 marks)

3. Jan 2018 (3H) Q2

(a) Use your calculator to work out the value of

$$\frac{8.9 + 2.345}{\sqrt{0.76 \times 2.9}}$$

Write down all the figures on your calculator display.

British Math

(b) Give your answer to part (a) correct to 2 significant figures.

.....
(1)

(Total for Question 2 is 3 marks)

Recurring

1. May 2019 (1H) Q15

Use algebra to show that the recurring decimal $0.2\dot{5}\dot{4} = \frac{14}{55}$

2. June 2018 (2HR) Q17

(a) Use algebra to show that $0.4\dot{3}\dot{6} = \frac{24}{55}$

(Total for Question 15 is 2 marks)



British Math (2)

6. May 2005 (4H) Q19

Convert $0.5\dot{1}$ to a fraction.

(2 marks)

7. Nov 2006 (4H) Q19

Convert the recurring decimal $0.\dot{2}\dot{3}$ to a fraction.

(2 marks)

8. May 2011 (4H) Q18

Show that the recurring decimal

$$0.\dot{3}9\dot{6} = \frac{44}{111}$$

(2 marks)



9. Jan 2012 (3H) Q17

Show that the recurring decimal $0.1\dot{7} = \frac{8}{45}$

(2 marks)

British Math

Surds

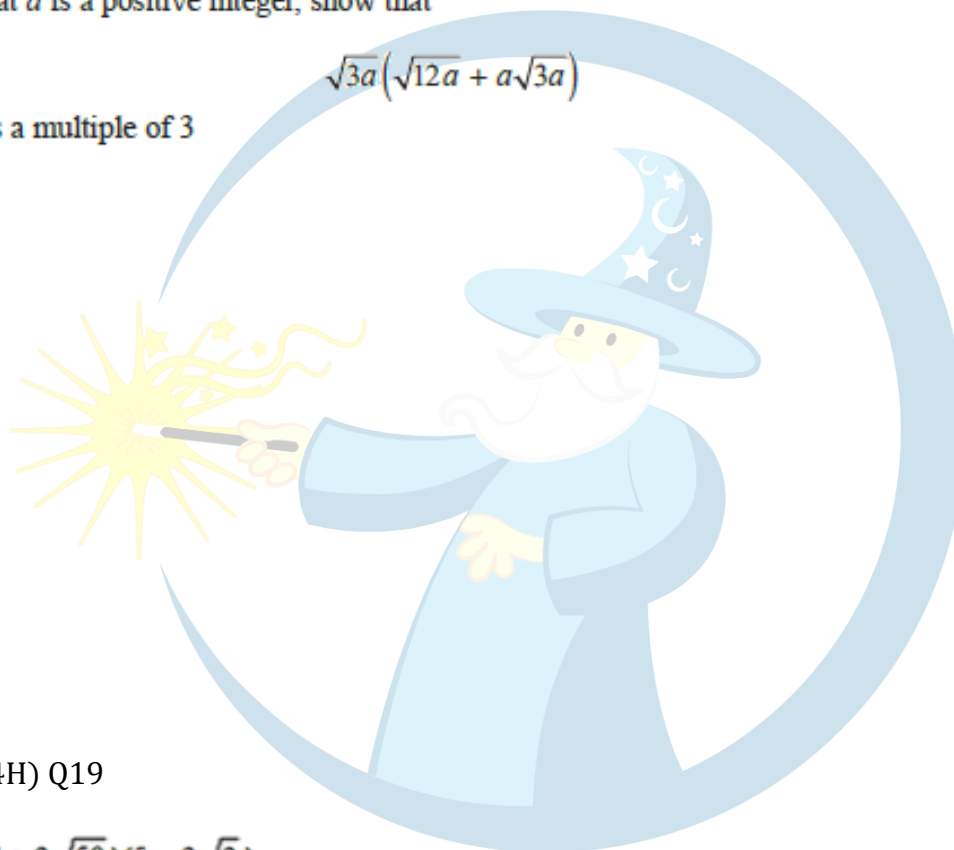
Expanding brackets

1. June 2016 (3HR) Q20

(b) Given that a is a positive integer, show that

$$\sqrt{3a}(\sqrt{12a} + a\sqrt{3a})$$

is always a multiple of 3



2. June 2016 (4H) Q19

Simplify $(7 + 2\sqrt{50})(5 - 2\sqrt{2})$ Give your answer in the form $a + b\sqrt{18}$ where a and b are integers.
Show your working clearly.

British Math

3. Jan 2017 (4H) Q16

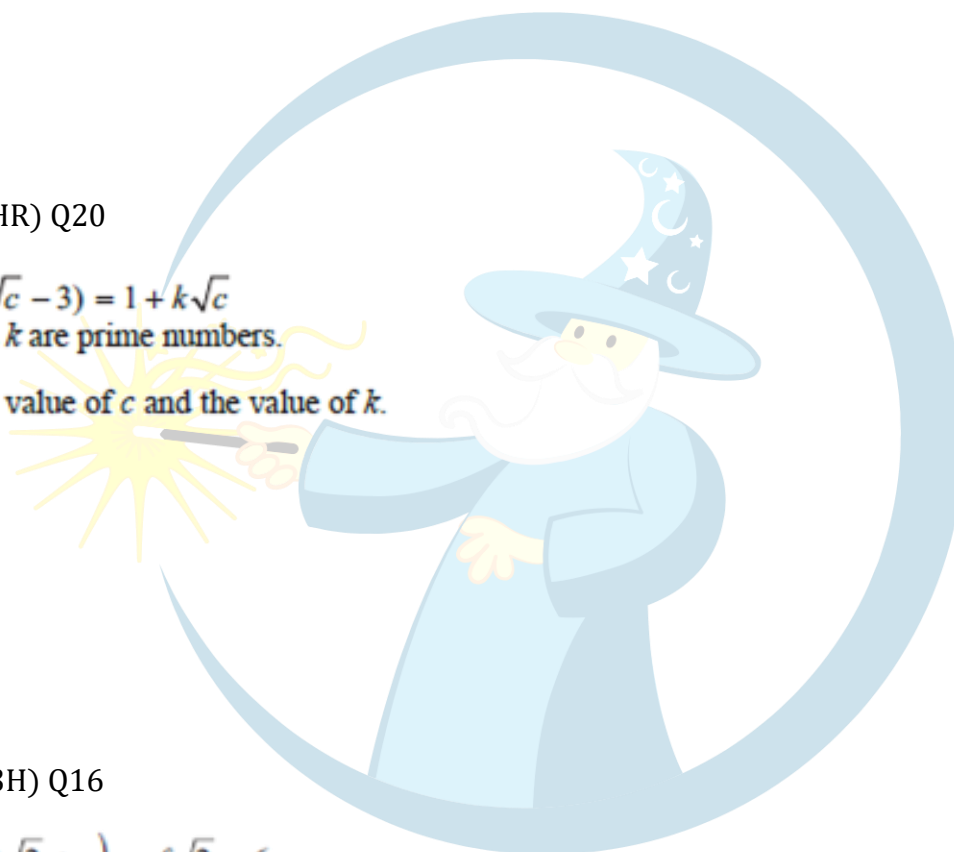
(c) Show that $(7 - 2\sqrt{5})(7 + 2\sqrt{5}) = 29$

Show your working clearly.

4. Jan 2017 (4HR) Q20

$(3 + \sqrt{c})(2\sqrt{c} - 3) = 1 + k\sqrt{c}$
where c and k are prime numbers.

(a) Find the value of c and the value of k .



5. June 2017 (3H) Q16

$(5\sqrt{2} - e)(3\sqrt{2} + e) = f\sqrt{2} - 6$

Given that e and f are positive integers,

find the value of e and the value of f .

British Math

Rationalization

1. Jan 2017 (3HR) Q18

Given that p is a prime number, rationalise the denominator of $\frac{7\sqrt{p} - p^2}{\sqrt{p^3}}$
Simplify your answer.

2. June 2018 (2H) Q21

(b) Express $\frac{2}{\sqrt{3}-1}$ in the form $p + \sqrt{q}$
where p and q are integers.
Show your working clearly.



3. June 2018 (2HR) Q17

(b) Show that $\frac{\sqrt{20} + \sqrt{80}}{\sqrt{3}}$ can be expressed in the form \sqrt{a} where a is an integer.

Show your working clearly.

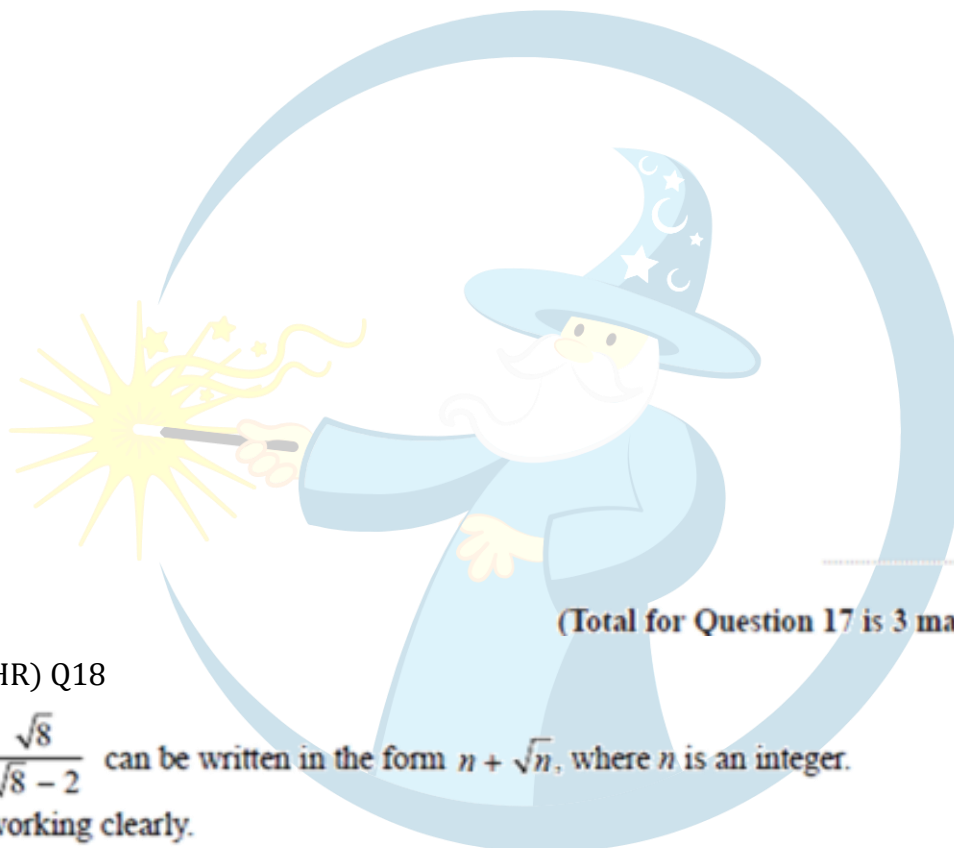
(2)

British Math

4. June 2018 (3H) Q17

Rationalise the denominator of $\frac{6 + \sqrt{10}}{\sqrt{2}}$

Give your answer in the form $a\sqrt{b} + \sqrt{c}$ where a , b and c are prime numbers.
Show your working clearly.



5. Jan 2019 (1HR) Q18

Show that $\frac{\sqrt{8}}{\sqrt{8} - 2}$ can be written in the form $n + \sqrt{n}$, where n is an integer.

Show your working clearly.

British Math

(Total for Question 18 is 3 marks)