

### Challenge 2019 Maths 2 solutions

1) £3.50

2) A:  $\frac{44 \times 1.609}{4.546} = 15.57$  km per litre

B: 6.3 litres for 100 km  
1 litre for 15.87 km

So B is more efficient

3) a) i)  $2x - a$

ii)  $\frac{9}{2x}$

b)  $L = A - \frac{M^2}{K^2}$

c)  $x = -8$

d)  $\frac{5x}{6}$

4) a) £32.50

b) 203

5) 9.91%

6)  $27.5 \leq 4\pi r^2 \leq 28.5$

$2.18 \leq r^2 \leq 2.27$

$1.48 \leq r \leq 1.51$

$3.23 \leq r^3 \leq 3.42$

$13.56 \leq \frac{4}{3}r^3 \leq 14.31$

So it must be 14 to the nearest whole number

7) a) 23.3cm

b)  $164\text{cm}^2$

8) 24 boys in the Year 7 class

12 minutes to mark each Year 8 boy's homework last week

9) 34 tons, 71 stones, 6 pounds and 7 ounces

10) Height = 71cm, width = 226cm

11)  $27.6\text{cm}^2$

12) Cosmic shield by 35 pence

13)  $11.3\text{cm}^2$

- 14)a) i)  $6\sqrt{5}cm^2 = 13.4cm^2$   
ii)  $3.83cm$   
b)  $4.15cm^2$

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