

Ratio and Proportion Homework

1. a) $24 : 36$
 $\div 12$ $2 : 3$ ✓ $\div 12$

b) £8 : £44
 $\div 4$ $8 : 44$
 $\div 4$ $2 : 11$ ✓ $\div 4$

c) 100m : 2km
100m : 2000m
 $\div 100$ $100 : 2000$
 $\div 100$ $1 : 20$ ✓ $\div 100$

d) $2\frac{1}{2} : \frac{1}{2}$
 $\div \frac{1}{2}$ $5 : 1$ ✓ $\div \frac{1}{2}$

e) 3hrs : 30mins
180mins : 30mins
 $\div 30$ $180 : 30$
 $\div 30$ $6 : 1$ ✓ $\div 30$

5

2. a) No. parts = $3 + 1$
 $= 4$ ✓

Value of part = $24 \div 4$
 $= £6$ ✓

$3 : 1$

$3 \times 6 : 1 \times 6$

£18 : £6 ✓

4

b) No. parts = $7 + 3$
 $= 10$ ✓

Value of part = $500 \div 10$
 $= 50\text{kg}$ ✓

$7 : 3$

$7 \times 50 : 3 \times 50$

350kg : 150kg ✓

4

c) No. parts = $11 + 2$
 $= 13$ ✓

Value of part = $52 \div 13$
 $= £4$ ✓

$11 : 2$

$11 \times 4 : 2 \times 4$

£44 : £8 ✓

4

3. No. parts = $3 + 2$
 $= 5$ ✓

Value of part = $10\,000 \div 5$
 $= £2\,000$ ✓

Nicola : Kelly

$3 : 2$

$3 \times 2000 : 2 \times 2000$

£6000 : £4000 ✓

4

4.

a) Cotton : Nylon : Wool
 4 : 2 : 3
 $4 \times 30 : 2 \times 30 : 3 \times 30$
 120 kg : 60 kg : 90 kg
 60 kg of nylon needed.

No. parts = $4 + 2 + 3$
 = 9 ✓
 Value of part = $270 \div 9$
 = 30 kg ✓

3

b) Cotton : Nylon : Wool
 4 : 2 : 3
 $\times 5$ 20 : 10 : 15 $\times 5$
 Material = $20 + 10 + 15$
 = 45 kg ✓

5

c) Cotton : nylon : wool
 $\times 7$ 4 : 2 : 3 $\times 7$ ✓
 28 : 14 : 21 ✓
 or $\times 6$ 24 : 12 : 18 ✓
 Maximum amount = $24 + 12 + 18$
 = 54 kg ✓

2

5) 4 eggs \Rightarrow 6 people
 $\div 2$ 2 eggs \Rightarrow 3 people ✓ $\div 2$
 $\times 5$ 10 eggs \Rightarrow 15 people ✓ $\times 5$
 6 extra eggs are needed. ✓

3

6) a) 6 hours \Rightarrow 3 people
 $\times 3$ 18 hours \Rightarrow 1 person ✓ $\div 3$
 $\div 4$ 4.5 hours \Rightarrow 4 people ✓ $\times 4$
 Edidit will save 1.5 hours. ✓

3

b) 18 hours \Rightarrow 1 person
 $\div 2$ 9 hours \Rightarrow 2 people ✓ $\times 2$
 It will take 9 hours.

1

$\frac{2.5}{7} \overline{) 18.4050}$

7.) a) $\begin{array}{l} \div 9 \\ \times 20 \end{array} 45\% \Rightarrow 180$ $\begin{array}{l} \div 9 \\ \times 20 \end{array} 5\% \Rightarrow 20$ $\begin{array}{l} \div 9 \\ \times 20 \end{array} 100\% \Rightarrow 400$ ✓ ✓ ✓

b) Rangers $\Rightarrow \frac{1}{10} \times 400$
 $= 40$ ✓

Caley Jays $\Rightarrow \frac{1}{5} \times 400$
 $= 80$ ✓

Celtic $\Rightarrow \frac{1}{4} \times 400$
 $= 100$ ✓

Ross county $\Rightarrow 180$

Total 43