eClassroom

GCSE Mathematics

Exchange Rates & Best Value

Worked Solutions

Pearson Edexcel GCSE & iGCSE Mathematics

Section A — Foundation — Worked Solutions

[Fluency] Question 1

250×1.17

∴ **€292.50**

[Fluency] Question 2

351÷1.17

∴ **£300**

[Fluency] Question 3

400g: 1.60/400=0.40p/g 650g: 2.47/650=0.38p/g

∴ **650 g is better value**

[Fluency] Question 4

6pk: 2.40/6=40p/pen 10pk: 3.70/10=37p/pen

∴ **10-pack is better value**

[Fluency] Question 5

74000÷185

∴ **£400**

[Reasoning] Question 6

Convert €45: 45÷0.86=£52.33... Wait: €1=£0.86 so €45=45×0.86=£38.70

£38.70<£40

∴ **France is cheaper at £38.70 vs £40**

[Reasoning] Question 7

3pk: 2.19/3=73.0p/bottle

5pk: 3.45/5=69.0p/bottle

8pk: 5.52/8=69.0p/bottle

∴ **5-pack and 8-pack tied as best value at 69p/bottle**

[Reasoning] Question 8

Old: $500÷1.25=£400

New: $500÷1.18=£423.73

Extra: £423.73–£400

∴ **£23.73 more**

[Problem Solving] Question 9

A: 1.08/1500=0.072p/ml

B: 1.36/2000=0.068p/ml

C: 0.45/500=0.090p/ml

∴ **Size B (2 litre) is best value at 0.068p/ml**

[Problem Solving] Question 10

75×1.609

∴ **120.675 km/h**

Section B — Higher — Worked Solutions

[Fluency] Question 1

£500×1.28=CAD640

640×0.73

∴ **€467.20**

[Reasoning] Question 2

(a) New rate: 1.35×0.96=1.2960

(b) Old: £200×1.35=$270. New: £200×1.296=$259.20. Diff: $10.80

∴ **(a) £1=$1.2960 (b) $10.80 less**

[Fluency] Question 3

2kg: 3.60/2000=0.180p/g

750g: 1.40/750=0.187p/g

5kg: 8.75/5000=0.175p/g

∴ **5 kg is best value at 0.175p/g**

[Reasoning] Question 4

At early rate: 1800÷1.15=£1565.22

At today's rate: 1800÷1.20=£1500.00

∴ **Extra cost: £65.22**

[Reasoning] Question 5

25+0.05n<18+0.12n

7<0.07n

n>100

∴ **Plan A is cheaper when using more than 100 minutes per month**

[Problem Solving] Question 6

Sell ex-VAT: 336÷1.20=£280

Profit: £280–£240=£40

Margin: 40/240×100

∴ **16.67%**

[Problem Solving] Question 7

New rate: 1.18×1.03=£1=€1.2154

Pounds: 2000÷1.2154

∴ **£1645.55**

[Problem Solving] Question 8

UK=£65

US: 79÷1.28=£61.72

EU: 74÷1.17=£63.25

∴ **USA is cheapest at £61.72**

[Problem Solving] Question 9

UK: $1000\times1.03^3=£1092.73$

Europe: $1170\times1.025^3=€1259.76$

∴ **UK: £1092.73 Europe: €1259.76**

[Problem Solving] Question 10

(a) PPP rate: £1=5.15/3.99=$1.2907

(b) Actual rate £1=$1.28<$1.2907

The pound is slightly undervalued according to PPP.

∴ **(a) £1 ≈ $1.29 (b) Pound is undervalued (actual rate buys fewer $ than PPP suggests)**