Calculation Problems Exam Practice

Q1. Here is a drinks menu at a café:

Menu	
Tea:	70p
Coffee:	£1.45
Milkshake:	£1.10
Lemonade:	80p
Cola:	55p

Sarah buys 3 teas, 2 coffees, 3 milkshakes and 1 cola and using a £10 note. Work out how much change she should receive.

$$3 \times 0.70 = 2.10$$
$$2 \times 1.45 = 2.90$$
$$1 \times 55 = \underline{0.55}$$
$$\text{Total} \quad £5.55$$

$$\text{Change} = £10 - 5.55$$
$$= £4.45$$

Answer: £4.45

(3 marks)

Q2. At a stationers, packs of pens cost £2.45 each and packs of pencils cost £1.80 each. Mark buys 3 packs of pens and 7 packs of pencils. Work out the total amount of money he spends.

$$3 \times £2.45 = 7.35$$
$$7 \times £1.80 = 12.60$$
$$\text{Total} = 19.95$$

Answer: £19.95

(2 marks)

Q3. Charles and Emma collect stamps. Together they have 364 stamps, and Charles has 28 more than Emma.
How many stamps does Emma have?

let Emma's stamps = x

$$x + (x+28) = 364$$
$$2x + 28 = 364$$
$$2x = 336$$
$$x = 168$$

Answer: 168

(2 marks)

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Q4. Tom runs a sweet shop which sells bags of chocolate mints. Each bag contains 15 sweets. From his supplier, he receives a bag of 300 chocolate mints. He decides to put aside 40 for his friend Simon, and to take home 25 for his children. The rest he will sell in his shop. How many bags of sweets can he make up to sell?

- $300 - 25 - 40 = 235$

- $235 \div 15 = 15.\dot{6}$ or $15\overline{)235}$ $\quad 15$

  $(r = 10)$

  15 bags

Answer: __15 bags__

(4 marks)

Q5. A patient is prescribed some medication by her doctor. She is instructed to take 4 tablets per day. A pack of 14 tablets costs £5.60. How much would she pay each week for the tablets used?

- Week: $7 \times 4 = 28$ tablets required

  28 tablets = 2 packs of 14

- $2 \times £5.60 = £11.20$

Answer: __£11.20__

(4 marks)

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Q6. Cal is saving for a holiday. He will need £250 in spending money, and the flights will cost £385. He will be spending 7 nights in a hotel which charges £62 a night. If he saves £120 from his monthly salary, work out how many months it will be before he has enough saved for his holiday.

$$385$$
$$+ \; 7 \times 62$$
$$+ \; 250$$
$$£1069 \text{ total.}$$

$$1069 \div 120 = 8.9 \quad \text{or}$$

$$\begin{array}{r} 8 \\ 120 \overline{)\;1069} \\ 960 \\ \hline (r = 109) \end{array}$$

9 months required

Answer: 9 months

(4 marks)

Q7. Mary is organising a children's party. She will need to allow 2 glasses of cola per child. Each glass contains 400 ml of cola. She buys the cola in 1.5 litre bottles, which cost £1.39 each.
If there will be 12 children at the party, will she be able to afford the drinks with a budget of £10? You must show all your working.

- $12 \times 2 = 24$ glasses required

- $24 \times 400\,ml = 9600\,ml$ needed

- $9600 \div 1500 = 6.4$ bottles

- need 7 bottles $\times$ £1.39 $= 9.73$

- She can afford it

Answer: _Can afford it_

(4 marks)

Q8. At a tea factory, raw tea is put into teabags containing approximately 3 grams of tea. They pack the bags into boxes which contain 280 bags. Vans only leave the factory if they contain at least 300 boxes of tea. If the factory has a delivery of 600 kg of raw tea, work out how many vans will be used to distribute the tea bags.

- $600000 \div 3 = 200{,}000$ bags

- $200{,}000 \div 280 = 714.28\dot{} \ldots$ boxes

- 3 vans will be required

Answer: 3 vans

(4 marks)

Q9. Here is part of a work rota at a council parking department, which runs from Monday 1st February to Sunday the 28th of February.

Monday to Thursday: 8.00am to 5.00pm

Friday: 8.00am to 4.30pm

Saturday (3rd week in the month only):
                       9.00am to 1.00pm

There are 4 officers in the department and the pay for each of them is £15.40 an hour. Work out how much money the council will spend on employer salaries during this period.

Week 1, 2, 4 :   9 hours + 8.5 hours (each week)

Week 3   :   9 hours + 8.5 hours + 4 hours

Total = 4 × (9 + 8.5) + 4

      = 74 hours

Cost :   74 × £15.40

      = £1139.60 per officer

Total : 4 × £1139.60 = £4558.40

Answer: £4558.40

(3 marks)

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Q10. Here is a price list in a DIY store.

Prices:	
Nails:	£3.15 for a pack of 60
Screwdrivers:	£11.40 for 3
Hammers:	£32.60 for 4

For his design students, Derek wants to buy 12 hammers and 9 screwdrivers. He will also need 3200 nails. Work out how much he will need to spend.

- $3 \times £32.60 = £97.80$

$3 \times £11.40 = £34.20$

- $3200 \div 60 = 53.3$ packs

$\Rightarrow 54 \times £3.15 = £170.10$

- Total : $£302.10$

Answer: £302.10

(4 marks)