

- 1) Here are two offers for batteries.

<b>OFFER A</b> Pack of 4 £2.52 $\frac{1}{3}$ off	<b>OFFER B</b> Pack of 5 £2.75 Pay for 3 packs get 1 free
---	--

Zak wants to buy 40 batteries. Which is the cheaper offer? You must show your working.

Offer A	Offer B
$40 \div 4 = 10$ packs	$40 \div 5 = 8$ packs
$\frac{2}{3}$ of £2.52 $\Rightarrow$ £0.84	Pay for 6 packs:
£0.84 +	$6 \times £2.75 \Rightarrow$ £2.75
£1.68	<u>6 ×</u>
$10 \times £1.68 =$ £16.80	£16.50

Answer ... Offer B

(Total 5 marks)

- 2) Laura buys a saddle in the UK for £950. Delivery is free.  
 Steve buys the same saddle from Holland for 990 Euros. He pays 30 Euros for delivery.  
 £1 = 1.10 Euros  
 Including the delivery charge, whose saddle is cheaper? You must show your working.

$$£950 \times 1.1 = 950 + 95 = €1045$$

$$€990 + €30 = €1020$$

Answer ... Steve's from Holland

(Total 3 marks)

3) To complete task in 15 days company needs 4 people each working for 8 hours per day

The company decided to have 5 people each working for 6 hours per day

Assume that the people work at the same rate

(a) How many days will the task take to complete? You may assume they are working

$$4 \times 8 \times 15 = 32 \times 15 = 320 + 160 = 480 \text{ hours}$$

$$5 \times 6 = 30 \text{ hours}$$

$$480 - 30 = 16 \text{ days}$$

A. w. 16

(3)

(b) Comment on the assumption that the people work at the same rate

Constant work rate

(1)

(Total 4 marks)

4) The depth of a well is proportional to the square of the time taken to reach the bottom

	36	
y	2	5

Work with it

$$y \propto \sqrt{x} \quad 5 = \sqrt{a}$$

$$y = k\sqrt{x} \quad 15 = \sqrt{a}$$

$$2 = k\sqrt{36} \quad 225 = a$$

$$k = \frac{1}{3}$$

$$y = \frac{1}{3}\sqrt{x}$$

A. w. 225

(Total 4 marks)

- 5) W is inversely proportional to x.  
When  $W = 6$ ,  $x = 20$   
Work out the value of W when  $x = 24$

$$W \propto \frac{1}{x} \qquad W = \frac{120}{24}$$

$$6 = \frac{k}{20} \qquad = 5$$

$$k = 120$$

$$W = \frac{120}{24}$$

Answer ..... 5 .....

(Total 4 marks)

(Total for test = 20 marks)