

General Exam Paper 1 Solutions 2005

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1. (a) Given $209.3 - 175.48$

$$\begin{array}{r} 209.30 \\ - 175.48 \\ \hline 33.82 \end{array}$$

(b). Given 56.7×90

$$56.7 \times 10 = 567$$

$$\begin{array}{r} 567 \\ \times 9 \\ \hline 5103 \\ \hline 66 \end{array}$$

(c). Given $324.1 \div 7$

$$\begin{array}{r} 46.3 \\ 7 \overline{)324.1} \end{array}$$

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(d). Given: $\frac{3}{4}$ of 56 cm

Step 1 : Divide by bottom $4 \overline{)56}$

Step 2 : Multiply by top $14 \times 3 = 42\text{cm}$

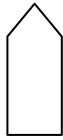
2. Difference between 12°C and -50°C .

$$12 - (-50) = 12 + 50 = 62^{\circ}\text{C}$$

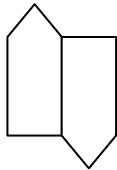
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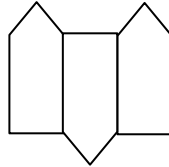
3. Given the bracelet is made up of these shapes:



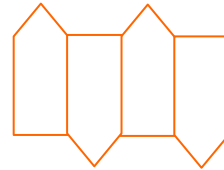
Shape 1



Shape 2



Shape 3



Shape 4

- (a) Shape 4 is drawn in red.
- (b) Completing the table we get:

Shape Number (s)	1	2	3	4	5	6		13
Number of matches (m)	5	9	13	17	21	25		53

(c) Finding the rule we have:

1. Difference is 4
2. Part of rule is: $m = 4s$
3. Correction factor, so that the rule works is, add on 1

4 × 1 + 1 = 5

Full rule is: $m = 4s + 1$ **Check !!!!**

(d) Shape number for $m = 61$ is:

$$\begin{aligned}
 61 &= 4s + 1 \\
 4s &= 61 - 1 \\
 4s &= 60 \\
 s &= 60 \div 4 = 15
 \end{aligned}$$

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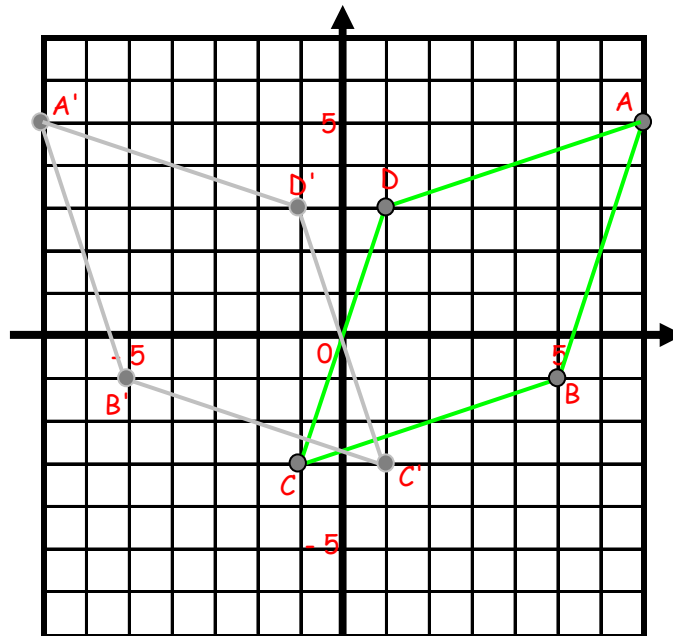
4. (a) Given the ship is carrying 2800 cars and each is worth £20 000.

Total value is: $2800 \times 20\,000 = \text{£}56\,000\,000$

- (b) In scientific notation we have: 5.6×10^7

Remember scientific notation $a \times 10^n$ a must be between $1 < a < 10$
 n is an integer

5. (a) Plotting the points A (7, 5), B (5, -1) and C (-1, -3) we have:



- (b) The fourth point D to complete the rhombus is (1, 3).
(c) See graph for reflection in the y-axis.

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6. Given the conversion table to convert 29lb/sq in to kg/sq cm we have:

lb/sq in	20	22	24	26	28	30	32	34
kg/sq cm	1.41	1.55	1.69	1.83	1.97	2.11	2.25	2.39

$$\frac{1.97 + 2.11}{2} = 2.04 \text{ kg/sq cm}$$

7. (a) Given cheese roll and 1 bottle of water costs £1.38 and cheese roll and 2 bottles of water cost £1.77, then a bottle of water costs:

$$£1.77 - £1.38 = 39\text{p}$$

- (b) Cheese roll costs £1.38 - 39p = 99p.

Cost of 3 cheese rolls and 4 bottles of water is:

$$99\text{p} \times 3 = £2.97$$

$$39\text{p} \times 4 = £1.56$$

$$\text{Total cost: } 2.97 + 1.56 = £4.53$$

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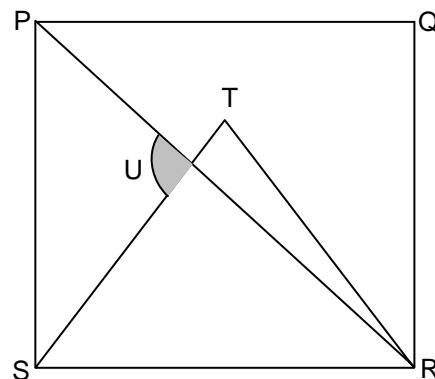
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8. Given John sells a football programme for £2 and he bought it for £1.60 then his percentage profit is:

$$\frac{2.00 - 1.60}{1.60} \times 100 = 25\% \text{ profit}$$

9. Given the diagram and:

- PQRS is a square
- PR is a diagonal of the square
- Triangle RST is equilateral



Finding angle SUP we have:

Since PR is diagonal angle SPU = 45°

Since RST is equilateral angle PSU is $90^\circ - 60^\circ = 30^\circ$

Hence angle SUP is $180^\circ - 45^\circ - 30^\circ = 105^\circ$