General Exam Paper 1 Solutions 2003

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1. (a) Given 3.58 – 2.734

$$\begin{array}{r} {}^2\cancel{3}.{}^1\cancel{5}{}^7\cancel{8}{}^1 0 \\ -\quad 2.\,7\,3\,4 \\ \hline 0.\,8\,4\,6 \end{array}$$

(b). Given 6.37 x 60

Step 1 : 6.37 x 10 = 63.7

Step 2 :

$$\begin{array}{r} 63.7 \\ \times\ 6 \\ \hline 382.2 \\ 24 \end{array}$$

(c). Given 13.8 ÷ 4

$$\begin{array}{r} 3.35 \\ 4\overline{)13.8} \end{array}$$

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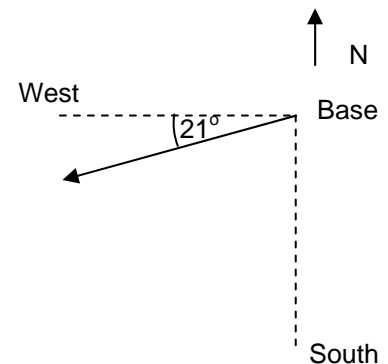
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(d).

$$\frac{3}{4} + \frac{1}{16}$$

Step 1 : Make denominator (bottom) the same $\frac{12}{16} + \frac{1}{16}$

Step 2 : Add the numerators $\frac{12}{16} + \frac{1}{16} = \frac{13}{16}$

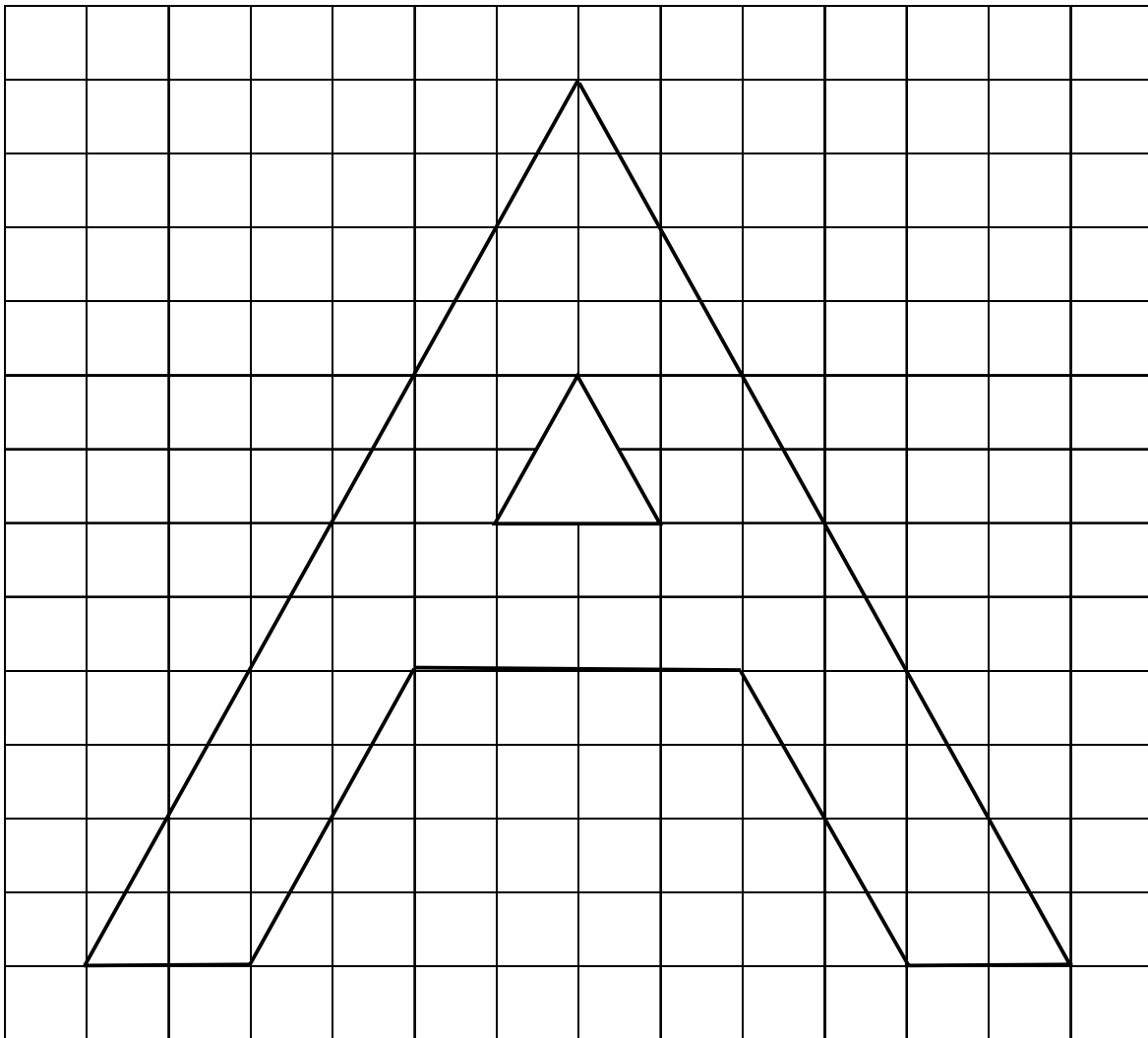2.   Given the diagram the tree figure bearing is:

$270^o - 21^o = 249^o$

3.   Given there are 9 wooden ball in a bag numbered 1 to 9. The chance that a number is more than 7 is:

$$P(> 7) = \frac{number\ over\ 7}{total\ number} = \frac{2}{9}$$

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4.   Given the ram of the letter A. Increasing it by a factor of 2 we get.
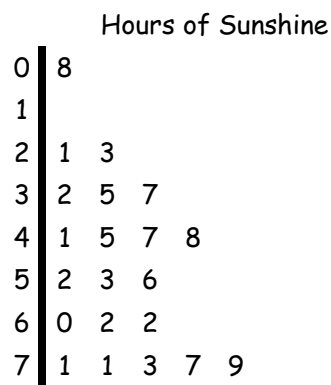
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5. Given the stem leaf diagram for the amount of sunshine each day in June:

    Hours of Sunshine

    ```
    0 | 8
    1 |
    2 | 1  3
    3 | 2  5  7
    4 | 1  5  7  8
    5 | 2  3  6
    6 | 0  2  2
    7 | 1  1  3  7  9
    ```

    n = 21   Key 3 | 2   means 3.2hours

    (a)   The range is given by:

           7.9 – 0.8 = 7.1

    (b)   The median number of hours is:

           Median is the middle number after data has been sorted 5.2 hours

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6.   Given information on Pizza Restaurant bill the correct service charge is:

15% of £33

=0.15 × 33 = £4.95

Total charge = £33 + £4.95 = £37.95

Bill is wrong by £1

7.   Given the rules for the True or false game.

True = +3   False = -1

(a)   Given Ann got 2 questions correct and 8 wrong her score is:

2 x 3 – 8 = -2

(b)   Given David answered 10 questions and scored 18 points.
To work out how many questions he got right:

R	W	T
9	1	26
8	2	22
7	3	18
6	4	14
5	5	10
4	6	6
3	7	2

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8. Given the paper sizes information and looking at the pattern the sizes for A10 will be:

A3	297	×	420
A4	210	×	297
A5	148	×	210
A6	105	×	148
A7	74	×	105
A8	52	×	74
A9	37	×	52
A10	26	×	37

9. Given the planet Pluto is approximately 7364 million miles from the Sun.

In scientific notation the number is:
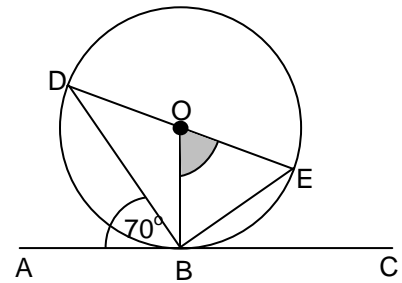
$$7\,364\,000\,000 = 7.364 \times 10^{9}$$

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

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10. Given
    - Centre O
    - AC is a tangent line to the circle at B
    - Angle DBA = 70°

Angel BOE is given by:

Since AC is a tangent to the circle, angle ABO is right-angled.

Angle DBO is 90° – 70° = 20°

ODB is an isosceles triangle so angle ODB = 20° and angle BOD = 140°.

Finally, DOE is a straight line therefore angle BOE is:

$$180° – 140° = 40°$$