Form 1	Term 2	121 A - Mathematics	21-Mei-16	Weekly Ambush

ADM………… NAME ……………………………………………………………………… CLASS ……..

1. Find the square root of the following using the **factor method**
   a. 2401 **(2mks)**
   b. 6561 **(2mks)**

2. Use tables to find the **square root** of **(4mks)**
   a. 0.8236
   b. 1.86
   c. 42.57
   d. 641.978

3. The surface area of a sphere of radius r is given by the formula $A = 4\pi r^2$. What is the radius of a sphere whose surface area is $120cm^2$ (**correct to 3 decimal places**) **(2mks)**

4. Solve the following recurring decimals

   a. Write $0.08\dot{5}\dot{5}$ as a fraction in its lowest terms **(2mks)**

   b. Write $0.0\dot{2}\dot{3}\dot{4}$ as a fraction in its lowest terms **(2mks)**

5. By the use of mathematics tables, find the squares of the following numbers and express your answer in standard form i.e. $(\boldsymbol{A} \times \mathbf{10}^{\boldsymbol{n}})$

   a. 0.004136 **(2mks)**

   b. 17.136 **(2mks)**

6. Ogasusu spent $\frac{1}{4}$ of his net January salary on school fees. He spent $\frac{1}{4}$ of the remainder on electricity and water bills. He then spent $\frac{1}{9}$ on what was left on transport. If he finally had $sh. 3400$, what was his net January salary? **(3mks)**

7. Find the value of y in the following equation $(-\frac{1}{2} + \left(-\frac{4}{5}\right))\ of\ (-\frac{2}{3} + (-y)) = \frac{17}{20}$ **(3mks)**

1.(a) 2401

2401 → 7, 343

343 → 7, 49

49 → 7, 7 ✓1

$7 \times 7 \times 7 \times 7$

49×49.

Therefore the square root is <u>49.</u> ✓1

(b) 6561

6561 → 9, 729

729 → 9, 81 ✓1

81 → 9, 9

$9 \times 9 \times 9 \times 9$

81×81 ✓1

∴ 81 is the Square root of 6561

(2)(a) 0.8236

Rewrite as $\sqrt{82.36 \times \frac{1}{100}}$

$9.0752 \times \frac{1}{10}$

$= 0.90752$

Or ✓1

9.0752×10^{-1}

2(b) 1.86

$= 1.3638$ ✓1

2(c) 42.57

$$\begin{array}{r} 6.5192 \\ 54 \\ \hline 6.5246 \end{array}$$ ✓1

2(d) 641.978

Rewrite as

$\sqrt{6.41978 \times 100}$

Round off to 4 S.F

$\therefore \sqrt{6.420 \times 100}$

$= 2.5338 \times 10$ ✓1

$= 25.338$ or

2.5338×10^{1}

3. $A = 4\pi r^2$

But $A = 120\text{cm}^2$.

$\therefore 4\pi r^2 = 120$

$4 \times \frac{22}{7} \times r^2 = 120$

$\frac{88}{7} r^2 = 120$

$r^2 = \frac{\cancel{120}^{\cancel{30}\ 15} \times 7}{\cancel{88}_{\cancel{22}\ 11}}$

$r^2 = \frac{105}{11}$ ✓1

$r^2 = 9.5454$

Using Mathematical tables

$r = \sqrt{9.5454}$

$$\begin{array}{r} r = 3.0887 \\ +\ \ 8 \\ \hline 3.0895 \end{array}$$ ✓1

In 3d.p $= r = 3.090$

4(a) $0.0\dot{8}5\dot{5}$

Let $r = 0.085555$

$10r = 0.85555$

$100r = 8.5555$

$1000r = 85.5555$ ✓1

$1000r - 100r = 85 - 8$

$900r = 77$

$r = \frac{77}{900}$ ✓1

(b) Write $0.0\dot{2}3\dot{4}$ as a fraction

Let $r = 0.0234234$

$10r = 0.234234$

$100r = 23.4234$

$1000r = 23.4234$

$10000r = 234.234$ ✓1

$10000r - 10r = 234 - 0$

$9990r = 234$

$r = \frac{\cancel{234}\ \cancel{117}\ 13}{\cancel{9990}\ \cancel{4995}\ 555}$

$r = \frac{13}{555}$ ✓1

(5)(a) 0.004136

Rewrite as

$\left(4.136 \times \frac{1}{1000}\right)^2$

$$\begin{array}{r} = 17.057 \\ 50 \\ \hline 17.107 \end{array}$$ ✓1

$= 17.107 \times \frac{1}{1000000}$

$= 1.7107 \times 10 \times \frac{1}{10^6}$

$= 1.7107 \times 10^{-5}$ ✓1

5(b) 17.136^2.

$= 1.7136 \times 10^1$ Round off to 4 S.F

$= (1.714 \times 10^1)^2$

$$\begin{array}{r} = 2.924 \\ 14 \\ \hline 2.938 \end{array}$$ ✓1

$= 2.938 \times 100$

$= 2.938 \times 10^2$ ✓1

6. $\frac{1}{4} \rightarrow$ School fees

Rem $= \frac{3}{4}$

$\frac{1}{4} \times \frac{3}{4} = \frac{3}{16}$ on electricity & water

Rem $= \frac{3}{4} - \frac{3}{16} = \frac{12-3}{16} = \frac{9}{16}$

Rem $= \frac{9}{16}$ ✓1

$\frac{9}{16} \times \frac{1}{9} = \frac{1}{16}$ Transport

$\frac{9}{16} - \frac{1}{16} = \frac{8}{16}$ Rem

If $\frac{8}{16} = 3400$ ✓1

$\frac{16}{16} = ?$

$= \frac{\cancel{16}^{1}}{\cancel{16}_{1}} \times \frac{\cancel{16}^{2}}{\cancel{8}} \times 3400$

$= 6800$ shillings ✓1

7) $\left(-\frac{1}{2} + \left(-\frac{4}{5}\right)\right)$ of $\left(-\frac{2}{3} + (-y)\right) = \frac{17}{20}$

$\left(-\frac{1}{2} - \frac{4}{5}\right)$ of $\left(-\frac{2}{3} - y\right) = \frac{17}{20}$

$\frac{-9}{10}$ of $\left(-\frac{2}{3} - y\right) = \frac{17}{20}$ ✓1

$-\frac{2}{3} - y = \frac{17}{20} \times -\frac{10}{9}$

$-\frac{2}{3} - y = -\frac{17}{18}$ ✓1

$y = \frac{-12+17}{18}$

$y = \frac{5}{18}$ ✓1