

JOY INTERNATIONAL COLLEGE

MATHEMATICS
SS2

Class:

S/N	Revision Topic	CONTENTS	OBJECTIVES
1	Number System	- Ratio and proportion - Theory of logarithm	Solve problems involving proportions, ratio and apply laws of logarithms
2	Algebra	- Expansion - Algebra of 2D and 3D shapes	Solve algebraic problems on expansion and substitution into formulae

REVISION QUESTIONS FOR TOPIC 1

1. If y varies inversely as x and $x = \frac{1}{2}$ when $y = 6$, find y when $x = \frac{1}{3}$
A. $\frac{1}{36}$ B. 9 C. 12 D. 18
2. Okon won a 200m race in 25 seconds. If he ran at the same rate, how long in minutes, would it take him to complete 800m?
A. $2\frac{1}{2}$ B. 2 C. $1\frac{1}{3}$ D. 1
3. A piece of land was offered for N2,100,000.00. if the price was reduced in the ratio 3:7, find the new selling price
A. N900, 000.00 B. N1,100,000.00 C. N1,600,000.00 D. N1,800,000.00
4. Evaluate: $\frac{\log 27}{\log \frac{1}{3}} + \frac{\log 4}{\log \sqrt{2}}$
A. -2 B. -1 C. 1 D. 7
5. If $\frac{1}{3}(81^n) = 81^2$, find n
A. 3 B. $\frac{9}{4}$ C. $\frac{4}{3}$ D. 2
6. A side of a regular polygon is 10cm. If each of its interior angles is 156° , calculate its perimeter
A. 100cm B. 120cm C. 150cm D. 250cm

7. Given that y varies inversely as the square of x . if $x = 3$ when $y = 100$, find the equation connecting x and y .
 A. $yx^2 = 300$ B. $yx^2 = 900$ C. $y = \frac{100x}{9}$ D. $y = 900x^2$
8. A petrol tanker is $\frac{2}{5}$ full. When 35,000 litres of petrol are added, the tanker will be $\frac{3}{4}$ full. What is the capacity of the tanker in litres?
 A. 70,000 B. 75,000 C. 90,000 D. 100,000
9. Evaluate $3.0 \times 10^1 - 2.8 \times 10^{-1}$, leaving the answer in standard form.
 A. 2×10^{-1} B. 2×10^2 C. 2.972×10^1 D. 2.972×10^2
10. A trader makes a loss of 15% when selling an article. Find the ratio, selling price : cost price
 A. 3:20 B. 3:17 C. 17:20 D. 20:23

ESSAY

- 1a. solve the equation: $2\log x - \log(1 - x) = \log(2 - x)$.
- 1b. If Ade gives N5 out of what he has to Chidi, the two of them will have equal amount. If Chidi gives out N5 to Ade, Ade will have twice as much as Chidi. How much did each of them have initially?

REVISION QUESTIONS FOR TOPIC 2

1. Expand : $(5x - y)(x - 3y)$
 A. $5x^2 + 16xy + 3y^2$ B. $5x^2 - 16xy + 3y^2$ C. $5x^2 + 14xy + 3y^2$ D. $5x^2 - 14xy + 3y^2$
2. Solve the simultaneous equations: $3x = -y$ and $y = x + 4$
 A. $x = -1$ and $y = 3$ B. $x = -3$ and $y = -1$ C. $x = -1$ and $y = -3$ D. $x = 3$ and $y = 1$
3. Factorize: $p - bq + q - bp$
 A. $(p - q)(1 - b)$ B. $(p + q)(b - 1)$ C. $(p + q)(1 - b)$ D. $(p + q)(1 + b)$
4. If $m = 2$, $n = -3$ and $p = -2$, evaluate $\frac{mn^2 - p^2}{2np} + \frac{m^2}{2n + p}$
 A. $\frac{1}{3}$ B. $\frac{2}{3}$ C. $\frac{4}{5}$ D. $1\frac{2}{3}$
5. Find the equation whose roots are $\frac{1}{2}$ and $\frac{-2}{3}$
 A. $6x^2 - x + 2 = 0$ B. $6x^2 - x - 2 = 0$ C. $6x^2 + x + 2 = 0$ D. $6x^2 + x - 2 = 0$
6. Make m the subject of the equation $y = mx + c$
 A. $m = \frac{y-x}{c}$ B. $m = \frac{y-c}{x}$ C. $m = x(y - c)$ D. $m = x(y+c)$
7. If $\frac{2(x-1)}{3} - \frac{3(2x-1)}{4} = \frac{1}{2}$, find x

- A. $-\frac{1}{2}$ B. $-\frac{3}{5}$ C. $-\frac{23}{10}$ D. -2
8. A cylinder of height 7cm has a curved surface area of 264cm^2 . Find the radius of its base (Take $\pi = \frac{22}{7}$)
A. 6cm B. 10cm C. 15cm D. 16cm
9. PQR is a triangle such that $PQ = 12\text{cm}$ and $\angle PQR = 50.1^\circ$, calculate the length of the perpendicular from P to QR
A. 7.70cm B. 9.21cm C. 10.62cm D. 14.35cm
10. Calculate, correct to the nearest whole number, the total surface area of a solid cone whose slant height is 18cm and base diameter 34cm. (Take $\pi = \frac{22}{7}$)
A. 1780cm^2 B. 1808cm^2 C. 18780cm^2 D. 1970cm^2

ESSAY

- 1a) If $x:y = 2:3$,
evaluate
 $\frac{x^2 - y^2}{y^2 + x^2}$
- 1b) Find the points on the curve $y = x^3 - 6x^2 + 9x - 5$ at which the gradient = 0

Note:

- Students should feel free to reach out to any of the teachers for assistance
- Please submit to your teacher's email address. Handwritten solution to essay questions can be photographed and uploaded.

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