MATHEMATICS

FORM 2

MID-TERM 1 EXAMS 2021

TIME: 1 HR

**INSTRUCTIONS**: *Answer all questions in the spaces provided*

1. Simplify $\frac{a^{4}b^{3}×a^{2}c^{4}×b^{-2}c^{3}}{a^{-3}b^{3}c^{3}}$ (3mks)
2. Using mathematical tables, find the value of (3mks)
3. $\frac{456×397}{273}$
4. $0.1468^{3}+\frac{1}{27.38}$ (2mks)
5. (a) Determine the gradient and the y-intercept of the following equation (3mks)

$$\frac{1}{3}x+\frac{2}{5}y+\frac{1}{6}=0$$

(b) Find an equation perpendicular to the line $2y=3x+4$ and passing through point (2, 6) (4mks)

1. The volume scale factor of two similar cylinders is 27. Find;
	1. The linear scale factor (2mks)
	2. The area scale factor (1mk)
2. By substitution method, solve the following simultaneous equations

$$2x+4y=16$$

$3x-y=2$ (3mks)

1. A quadrilateral has vertices P(-3,7), Q(-5,3), R(-3,1), and S(-1,3).
	1. On the grid provided, draw the quadrilateral and name it (2mks)



* 1. Find the equation of the line of symmetry of the quadrilateral formed in (a) above.

(2mks)

* 1. Draw the image of quadrilateral PQRS under a reflection in the line $y=x$ and give the coordinates of the image. (3mks)
	2. Find the equation of the line of symmetry of the image (2mks)