

PMR Mathematics Formula List for Paper 2

RELATIONS

1 $a^m \times a^n = a^{m+n}$

2 $a^m \div a^n = a^{m-n}$

3 $(a^m)^n = a^{mn}$

4 Distance = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

5 Midpoint

$$(x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

6 Average speed = $\frac{\text{distance travelled}}{\text{time taken}}$

7 Mean = $\frac{\text{sum of data}}{\text{number of data}}$

8 Pythagoras' Theorem
 $c^2 = a^2 + b^2$

SHAPES AND SPACE

1 Area of rectangle = length \times width

2 Area of triangle = $\frac{1}{2} \times$ base \times height

3 Area of parallelogram = base \times height

4 Area of trapezium = $\frac{1}{2} \times$ sum of parallel sides \times height

Rumus-rumus berikut boleh membantu anda menjawab soalan. Simbol-simbol yang diberi adalah yang biasa digunakan.

PERKAITAN

$$1 \quad a^m \times a^n = a^{m+n}$$

$$2 \quad a^m \div a^n = a^{m-n}$$

$$3 \quad (a^m)^n = a^{mn}$$

$$4 \quad \text{Jarak} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

5 Titik Tengah

$$(x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$6 \quad \text{Purata laju} = \frac{\text{jarak yang dilalui}}{\text{masa yang diambil}}$$

$$7 \quad \text{Min} = \frac{\text{hasil tambah nilai data}}{\text{bilangan data}}$$

8 Teorem Pithagoras

$$c^2 = a^2 + b^2$$

BENTUK DAN RUANG

$$1 \quad \text{Luas segiempat tepat} = \text{panjang} \times \text{lebar}$$

$$2 \quad \text{Luas segitiga} = \frac{1}{2} \times \text{tapak} \times \text{tinggi}$$

$$3 \quad \text{Luas segiempat selari} = \text{tapak} \times \text{tinggi}$$

$$4 \quad \text{Luas trapezium} = \frac{1}{2} \times \text{hasil tambah dua sisi selari} \times \text{tinggi}$$

- 5 Circumference of circle = $\pi d = 2\pi r$
- 6 Area of circle = πr^2
- 7 Curved surface area of cylinder = $2\pi r h$
- 8 Surface area of sphere = $4\pi r^2$
- 9 Volume of right prism = cross sectional area \times length
- 10 Volume of cuboid = length \times width \times height
- 11 Volume of cylinder = $\pi r^2 h$
- 12 Volume of cone = $\frac{1}{3}\pi r^2 h$
- 13 Volume of sphere = $\frac{4}{3}\pi r^3$
- 14 Volume of right pyramid = $\frac{1}{3} \times$ base area \times height
- 15 Sum of interior angles of a polygon = $(n - 2) \times 180^\circ$
- 16
$$\frac{\text{arc length}}{\text{circumference of circle}} = \frac{\text{angle subtended at centre}}{360^\circ}$$
- 17
$$\frac{\text{area of sector}}{\text{area of circle}} = \frac{\text{angle subtended at centre}}{360^\circ}$$
- 18 Scale factor, $k = \frac{PA'}{PA}$
- 19 Area of image = $k^2 \times$ area of object

- 5 Lilitan bulatan = $\pi d = 2\pi j$
- 6 Luas bulatan = πj^2
- 7 Luas permukaan melengkung silinder = $2\pi jt$
- 8 Luas permukaan sfera = $4\pi j^2$
- 9 Isipadu prisma tegak = luas keratan rentas \times panjang
- 10 Isipadu kuboid = panjang \times lebar \times tinggi
- 11 Isipadu silinder = $\pi j^2 t$
- 12 Isipadu kon = $\frac{1}{3} \pi j^2 t$
- 13 Isipadu sfera = $\frac{4}{3} \pi j^3$
- 14 Isipadu piramid tegak = $\frac{1}{3} \times$ luas tapak \times tinggi
- 15 Hasil tambah sudut pedalaman poligon = $(n - 2) \times 180^\circ$
- 16 $\frac{\text{panjang lengkok}}{\text{lilitan bulatan}} = \frac{\text{sudut pusat}}{360^\circ}$
- 17 $\frac{\text{luas sektor}}{\text{luas bulatan}} = \frac{\text{sudut pusat}}{360^\circ}$
- 18 Faktor skala, $k = \frac{PA'}{PA}$
- 19 Luas imej = $k^2 \times$ luas objek