

1. Calculate the volume-mean and volume-surface mean diameter for following screen analysis.

Mesh No.	Mesh Opening, mm	Mass fraction
4	4.75	0.15
5	3.35	0.45
6	2.80	0.30
8	2.00	0.10
10	1.80	

2. What is the sphericity of a cuboid whose length, breadth, and depth are in the ratio of 3:2:1?

3. Calculate the Sauter mean diameter and mass mean diameter for the following screen analysis.

Size, mm	Mass retained (g)
- 1.70 + 0.85	25
- 0.85 + 0.60	30
- 0.60 + 0.50	40
- 0.50 + 0.425	35
Pan	20

4. Find the shape factor of a cylindrical particle of 3-mm diameter and 3-mm length.

5. A crushed ore was screened, using a 3.35-mm (340 mesh) screen to separate the oversize material to be recycled for further crushing. The screen analysis of feed, overflow and underflow are given below. Find the input to the crusher for 100 kg/h of product and the screen effectiveness.

ISS mesh	Feed	Overflow	Underflow
+ 480	0.548	0.596	0.00
-480 + 340	0.146	0.168	0.113
-340 + 120	0.109	0.096	0.147
-120 + 60	0.045	0.039	0.086
-60 + 30	0.034	0.029	0.037
-30	0.118	0.072	0.621

6. Dolomite is produced at a rate of 2 tonne/h by crushing and then screening through a 16-mesh screen. Calculate the effectiveness of the screen for the following screen analysis (Weight percent)

Mesh	Feed (%)	Undersize (%)	Oversize (%)
4	12	-	22
8	21	-	26
16	22	0	28
32	30	42	24
60	8	28	-
100	5	18	-
100 through	2	12	-