

- Simplify: $\{(2^{1/6} + 2^{2/3}) \div 2^{14/15}\}$ of $6^{3/5}$
 - Find the LCM of 120, 80 and 36.
 - Solve the equations:
 - $4(2x-5) - 3(2x + 18) = 0$
 - $2^{x/5} - \frac{1}{4} = \frac{(x-1)}{2}$
 - Express 0.625625..... as a fraction in its simplest form.
 - If $f(x) = \frac{(x^2 - 25)}{(3x^2 - 10x)}$, find the value of
 - $f(5)$
 - $f(-5)$
 - Make L the subject of the formula $T = 2\pi \sqrt{\frac{L}{g}}$
 - In a group of 25 soccer fans, 10 support express, 8 support villa and 10 support neither team. Show the above information on a Venn diagram and use it to find the number of fans who support express and villa.
 - In a homework marked out of 20, a group of students obtained the following marks: 15, 20, 18, 17, 8, 18, 16, 20, 18, 17, 12 and 19. Find the mode and median marks.
 - If $f(x) = \frac{4x+2}{2x-5}$
Find (i) $f(2)$
- The value of x for which $f(x)$ is not defined.
 - If $f(x) = ax^2 + 4x + 4$ and $f(-1) = 9$, find the value of:
 - a
 - $f(-3)$
 - Solve the equation.
 - $5x - 2(x + 1) = 7$
 - $\frac{(x+2)}{5} - \frac{(x-2)}{3} = 2$
 - Find the L.C.M of 108, 288 and 720.
 - If sh 616,000 is to be shared among Sandra, Faith and Martha in the ratio of 2:4:5, how much more money did Martha get than Sandra.
 - Express 1.1818..... as a mixed fraction in its simplest form.
 - In a certain club with 30 members, 19 members play chess, 8 members play scrabble and chess and 2 members play only scrabble.
Find the number of members who don't play any of the two games while at the club.
 - using a ruler, pencil and a pair of compasses only, construct a triangle PQR with $PQ = 9\text{cm}$, angle $QPR = 60^\circ$ and angle $QOR = 45^\circ$
 - measure the sides
 - PR
 - QR

- (b) Construct a perpendicular from Q to meet the side PR at D. Construct perpendicular bisectors of sides QD and PD.

Using their point of intersection as a centre, draw a circle circumscribing the triangle PQD.

- (i) Measure the radius of the circumcircle.

Calculate the area of the circle.

17. (a) Given that $n(A) = 16$, $n(B) = 21$, $n(A \cap B) = 9$ and

$n(S) = 31$, find:

- (i) $n(A \cup B)$,
 (ii) $n(A \cap B)$.

18. Given that $f(x) = \frac{x^2-4}{x+1}$

find (i) $f(3)$

- (ii) the value of x if $f(x) = 0$

(iii) the value of x for which $f(x)$ is not defined.

19. Find the equation of the line passing through the points (2, 5) and (-3, 4).

20. Given that $h = 2a \sqrt{\frac{a+b}{M}}$, make M the subject of the formula and hence find the value of M when $h = 2$, $a = 5$ and $b = 15$.

21. On a certain day the exchange rates were quoted as follows:

US\$ 1 = Ush. 3,850.

£ 1 = Ush. 5,250.

- (i) Jane wants to go to the United States and she needs US dollars (US\$). How many US \$ dollars will she get from Ush. 740,000?

- (ii) How many shillings are there in £ 120?

22. The data below is of the weights in kilograms of 30 pupils.

45	40	33	32	44	44
33	38	37	35	33	45
39	41	32	37	39	42
38	39	42	40	44	36
45	42	35	43	38	35

- (a) Construct a frequency table for the data.

- (b) Use your table to:

- (i) Calculate the mean weight of the pupils.

- (ii) Draw a histogram for the data.

23. Using a pair of compasses, a pencil and a ruler only construct a triangle ABC with $AB = 9$ cm, $AC = 7.5$ cm, $\angle CAB = 60^\circ$. Bisect any two interior angles and use the point of intersection of the bisectors to inscribe the triangle.

(b) Measure:

- (i) Length BC.
 (ii) Radius of the circle.
 (iii) Angle ABC.

- (c) Calculate the circumference of the circle. (Use $\pi = 3.14$).