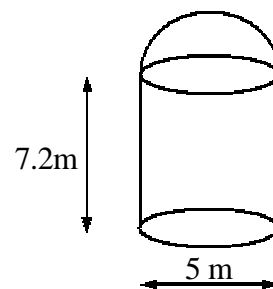


Prelim Revision – Paper 2

- Lewis buys 5 Mars bars and 3 Milky Ways for £3.04. Lorna buys 5 Milky Ways and 2 Mars bars for £2.09.
 - Taking the cost of a Mars bar to be 'x' pence and the cost of a Milky Way to be 'y' pence, construct two equations in x and y to show the above information.
 - Michael bought 3 Mars bars and 2 Milky Ways. How much did he pay?
- The Davies family buy 3 adult and 2 children's tickets for the swimming pool costing £10.70. The Williams family buy 5 adult and 3 children's tickets costing £17.30
 - How much do single adult and single children's tickets cost?
 - How much would 7 adults and 11 children cost in total?

- The shape shown is made from a cylinder and a hemisphere. Calculate its volume?

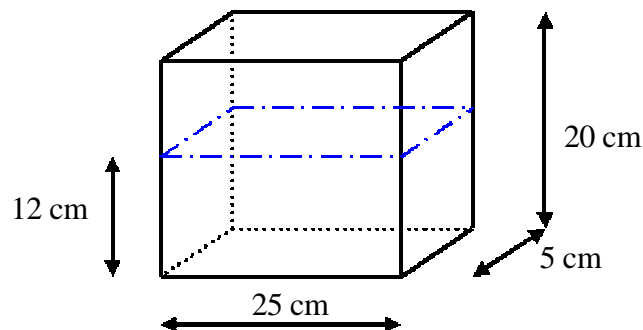


- A rectangular tank contains water to a height of 12 cm. Four identical steel spheres are dropped in to the tank raising the water level to a height of 14 cm.

Calculate

- The combined volume of the 4 spheres.
 - The volume of a single sphere.
 - The radius of the spheres (to 3 significant figures).
- A balloon contains 300cm^3 of gas when full. At 0700 it is punctured. 14% of the amount of gas at the beginning of each hour is lost by the end of that hour.

How many cm^3 of gas will be **lost** by 1000?
 - £5000 is invested in a bank and attracts **compound interest** at 4.5% p.a. Work out the **interest** and the **total amount** in the bank at the end of
 - 3 years
 - 10 years



7. James bought a house last year. It has lost 12% of its value since then and his now valued at £97,000. How much did James pay for the house? (give your answer to the nearest pound).

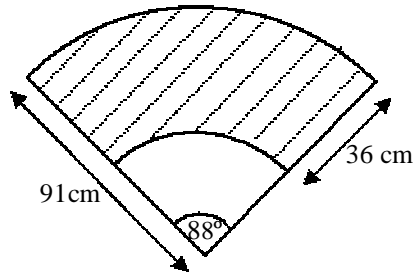
8. Write as a single fraction in its simplest form

a. $\frac{2}{5a} + \frac{3}{ab}$

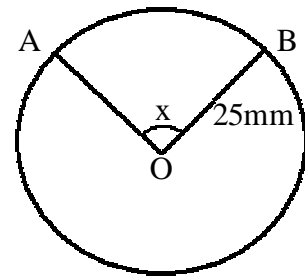
c. $\frac{4x}{(x-1)} - \frac{x}{4}$

b. $\frac{3}{(x+1)} - \frac{1}{(x-2)}$

9. Calculate the shaded area.



10. Calculate the angle x and hence the **arc length AB**, if the sector area AOB is 240mm^2 . Give your answer to 3 significant figures. (use the p button **not 3.14**)



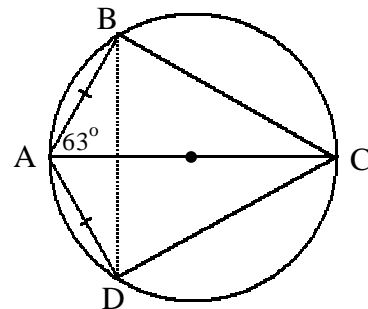
11. A golfer records his scores for two rounds of golf. Complete the table.

- a. What is the modal score
- b. What is the median score
- c. Calculate his mean score

Score	Frequency	Cummulative Frequency
2	1	
3	7	
4	9	
5	8	
6	5	
7	4	
8	2	

12. Given that BC is 10 cm calculate

- a. Angle BCD
- b. Distance BD



13. Solve the following equations, giving your answer to 1 decimal places

a) $2x^2 + 3x - 7 = 0$

b) $3x^2 = 8x - 2$

c) $x(5x - 1) = 3$

14. Simplify

a. $\sqrt{75} + 2\sqrt{3} - \sqrt{48}$

b. $\sqrt{128} - \sqrt{2} + \sqrt{18}$

15. Find the solutions of the following equations (to 1 decimal place) $0 \leq x \leq 360$.
Check your answers with your calculator.

a. $7 \sin x = 3$

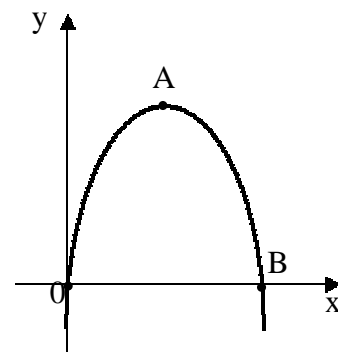
b. $7 \cos x - 3 = -7$

c. $\sqrt{2} \tan x = 10$

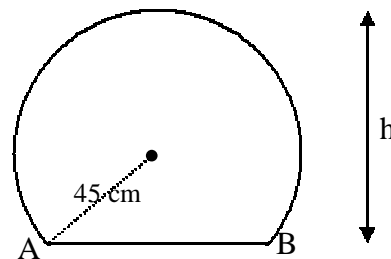
d. $6 \tan x - 2.5 = 9.8$

16. The following parabola has the equation $y = 7 - (x - 2)^2$

- Write down the coordinates of the maximum turning point A.
- What is the equation of the axis of symmetry?
- The parabola cuts the x axis at the origin 0 and B. Find the coordinates of B.



17. A mirror is shaped from part of a circle. If the circle has a radius of 45 cm and $AB = 70$ cm, calculate the height, h , of the mirror.



18. Calculate

- The missing side to 2 decimal places.
- The area of the triangle to 3 significant figures.

