

SCIENTIFIC CALCULATORS



Presenters: Yesbolat

Date: $29 - (05 * 2 + 0) = 19$

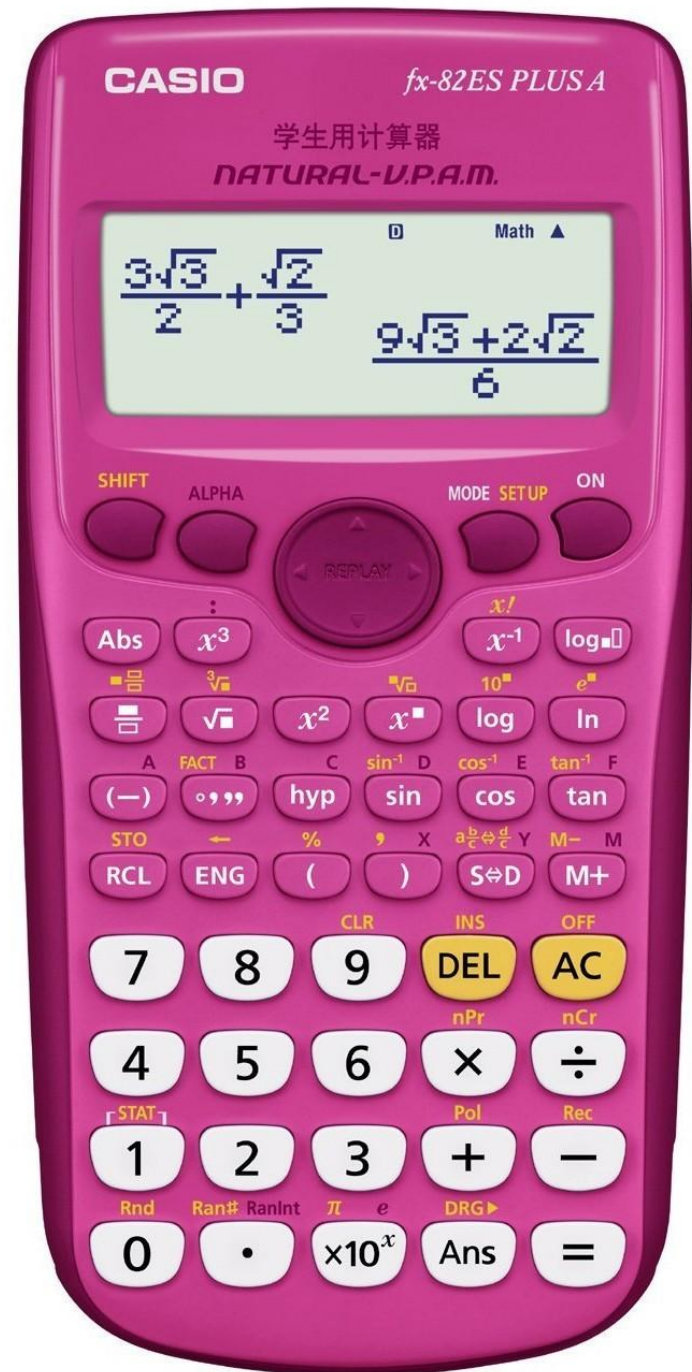
SCHEDULE.

- How to use the Scientific Calculators:
(5 min)
- Examples with calculations:
(20 min)
- Question / Answer session:
(7 min)
- Peer / Reflection Activity:
(3 min)



PURPOSE / OBJECTIVE:

- Using scientific calculators to solve questions in the following topics;
- ❖ Logarithms
- ❖ Trigonometry
- ❖ Combinations / Permutations.
- ❖ Statistics



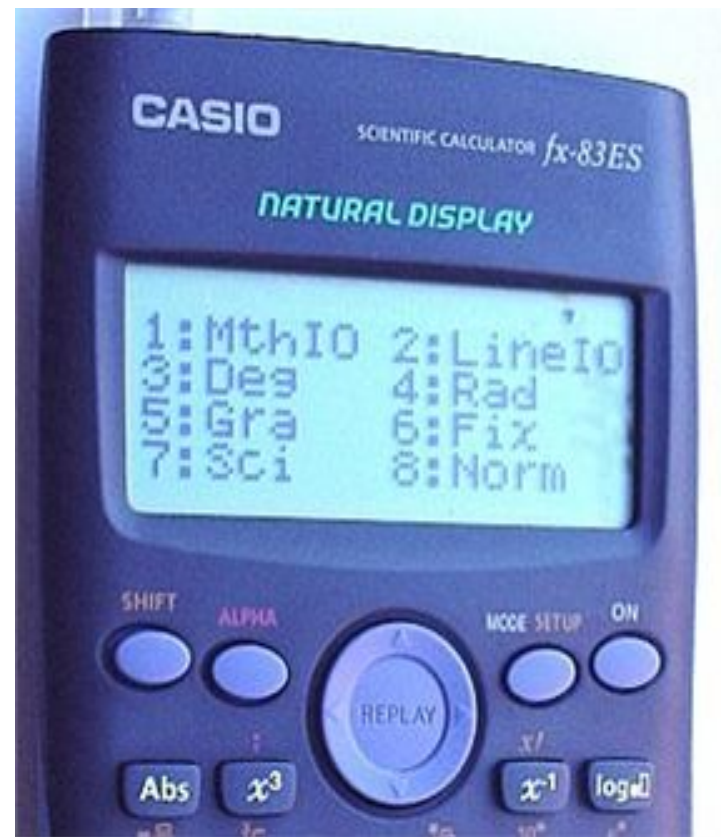
EXAMPLE

- The radius of a circle is 8.67cm. Find the circumference (Perimeter) of the circle.
- A) 236 cm
- B) 54.4 cm
- C) 54.5 cm
- D) 27.2 cm



BEFORE YOU START.

- Ensure that your calculator is set to degrees, and has Math format.
- SHIFT → SETUP → 1
- Clear the memory
- 0 → SHIFT → RCL → M+



LOGARITHMS

- Standard logarithm (Base of 10)
- Natural logarithm (Base of e)
- Logarithm with any base.

$$\log_b(x) = \frac{\log_{10}(x)}{\log_{10}(b)}$$



ASSESSMENT EXERCISE - LOGARITHMS

▣ $\log_7 10$

▣ 1.183

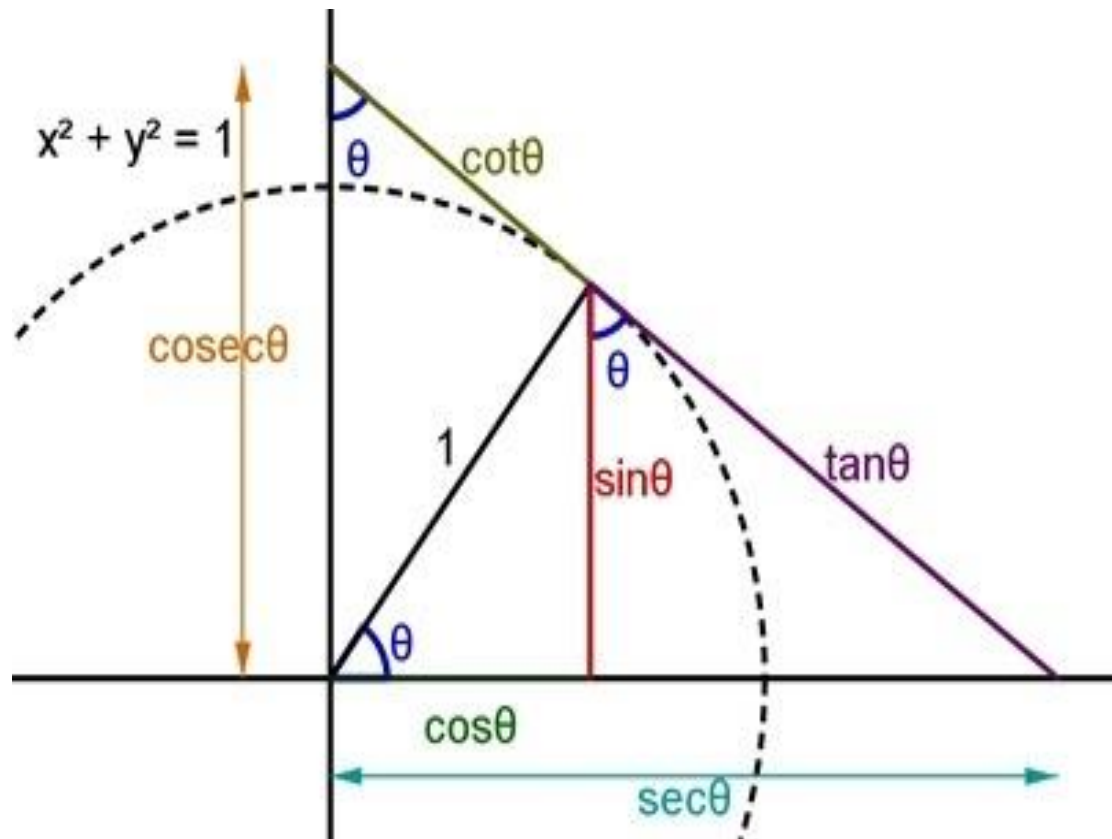
○ $\log \pi$

▣ 0.497



TRIGONOMETRY

- Using trigonometric ratios sine, cosine and tangent.
- Finding angles using trigonometry.



ASSESSMENT EXERCISE - TRIGONOMETRY

- ◻ Find $\sin 76^\circ$ • 0.9703
- $\tan \frac{5\pi}{12}$ in surd form • $2 + \sqrt{3}$
- Find θ if $\tan \theta^\circ = 1.56$ • 1
- Solve $2 \sin \left(x + \frac{\pi}{3} \right) = -1$ for $0 \leq x \leq 2\pi$ • $\frac{5\pi}{6}, \frac{3\pi}{2}$



PERMUTATIONS AND COMBINATIONS

- Permutations – Arranging in order
- Combinations – Choosing or selection

$${}_n C_r = \frac{{}_n P_r}{r!} = \frac{n!}{r!(n-r)!}$$



ASSESSMENT EXERCISE - COMBINATIONS

- A committee of 6 members is to be selected from 5 men and 9 women. Find the number of different committees that could be selected if;
- There are no restrictions.
- ${}^{14}C_6 = 3003$.
- There are exactly 3 men and 3 women on the committee.
- ${}^5C_3 \times {}^9C_3 = 840$
- There is at least 1 man on the committee.
- Total – All women, $3003 - {}^9C_6 = 2919$



ASSESSMENT EXERCISE - STATISTICS

- Find the mean and standard deviation for the data below. • $\mu = 95.1$
- 27, 36, 52, 89, 102, 116, 123, 149, 162 • $\sigma = 45.5$

Score	10	11	12	13	14	15	16
Freq	15	12	5	8	10	13	6

- $\mu = 12.7$

- $\sigma = 2.08$

