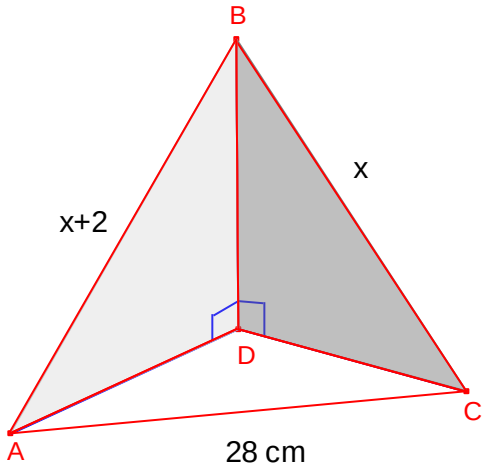
En la següent figura es mostra una piràmide de base triangular de base $\overset{\Delta}{ACD}$
L'aresta $\overline{BD}$ és perpendicular a les arestes $\overline{AD}$ i $\overline{CD}$
$\overline{AC} = 28\ cm, \overline{AB} = 2x, \overline{BC} = x, \angle ABC = 45°, \angle BAD = 30°$



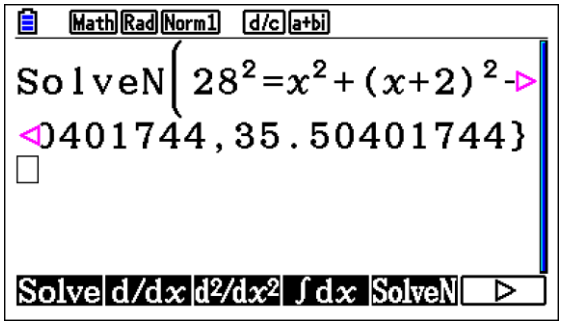
Calculeu $\overline{BD}, \overline{AD}, \overline{CD}$

Solució:

Aplicant el teorema del cosinus al triangle $\overset{\Delta}{ABC}$:

$28^2 = x^2 + (x+2)^2 - 2 \cdot x \cdot 2x \cdot \frac{\sqrt{2}}{2}$

Obrim el *Menú Ejec-Mat*
Resolem l'equació:



$x = \overline{BC} = 35.5040\ cm$

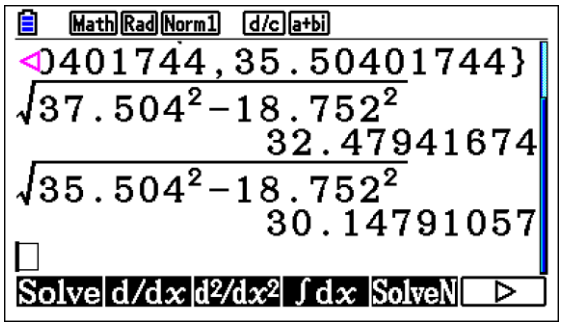
$\overline{AB} = x + 2 = 35.5040 + 2 = 37.5040\ cm$

Aplicant raons trigonomètriques al triangle rectangle rectangle $\overset{\Delta}{ADB}$

$\overline{BD} = \frac{1}{2}\overline{AB} = 18.7520\ cm$

Aplicant el teorema de Pitàgores als triangles rectangles $\overset{\Delta}{ADB}, \overset{\Delta}{BDC}$

$\overline{AD} = \sqrt{\overline{AB}^2 - \overline{BD}^2}, \overline{CD} = \sqrt{\overline{BC}^2 - \overline{BD}^2}$



$\overline{AD} \approx 32.4794\ cm, \overline{CD} \approx 30.1479\ cm$