T or F

T $\quad \cos 50^\circ = 1 - 2\sin^2 25^\circ$

$= \cos(2 \cdot 25^\circ)$

$= \cos 50^\circ$

F $\quad \sin 42^\circ = 2\sin 84^\circ \cos 84^\circ$

$= \sin 2(84^\circ)$

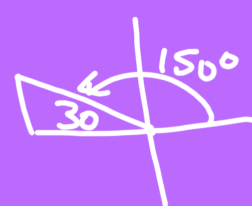
$= \sin 168^\circ$

Evaluate.

$$\frac{2\tan 75^\circ}{1-\tan^2 75^\circ} = \tan(2 \cdot 75^\circ)$$

$$= \tan 150^\circ$$

$$= \boxed{-\frac{\sqrt{3}}{3}}$$



T-F

$$\cos 130^\circ = \sqrt{\frac{1-\cos 260^\circ}{2}}$$

F

$$= \sin\left(\frac{260^\circ}{2}\right)$$

wrong func.

$$\cos 194^\circ = + \sqrt{\frac{1+\cos 388^\circ}{2}}$$

III

$$= \cos\left(\frac{388}{2}\right)$$

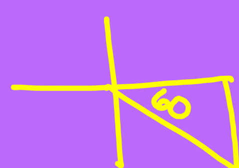
False (- sign)

$$= \cos 194^\circ$$

$\pm$ = determined by the quadrant where $\frac{A}{2}$ is located.

Evaluate

$$-\sqrt{\frac{1-\cos 600^\circ}{2}}$$



$$= \sin\frac{600^\circ}{2} = \sin 300^\circ = \boxed{-\frac{\sqrt{3}}{2}}$$

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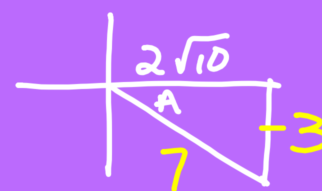
Evaluate.

Find $\cos 2A$ given $\csc A = \frac{-7}{3}\,\frac{r}{y}$ & $\frac{3\pi}{2} < A < 2\pi$

IV

$$\cos 2A = 2\cos^2 A - 1$$
$$= 2\left(\frac{x}{r}\right)^2 - 1$$
$$= 2\left(\frac{2\sqrt{10}}{7}\right)^2 - 1$$
$$= 2\left(\frac{40}{49}\right) - 1$$
$$= \frac{80}{49} - \frac{49}{49}$$
$$= \frac{31}{49}$$



$$x^2 + 9 = 49$$
$$\sqrt{x^2} = \sqrt{40}$$
$$x = \pm 2\sqrt{10}$$

$$\frac{\sin 2x}{1 - \cos 2x} = \cot x$$

Read the angles!

$$\frac{2\sin x \cos x}{\cancel{1} + (-\cancel{1} + 2\sin^2 x)} = \frac{\cos x}{\sin x}$$

$$\frac{\cancel{2\sin x}\cos x}{\cancel{2}\sin^2 x} =$$

$$\frac{\cos x}{\sin x} = \frac{\cos x}{\sin x}$$

$$\frac{1+\cos 2x}{\tan \frac{x}{2}} = \frac{2\cos^3 x + 2\cos^2 x}{\sin x}$$

1) Pick the identity that makes 1's cancel

2) Look at opposite side to choose

$$\frac{\cancel{1} + 2\cos^2 x - \cancel{1}}{\frac{\sin x}{1+\cos x}} = \frac{2\cos^2 x(\cos x + 1)}{\sin x}$$

$$\frac{2\cos^2 x(1+\cos x)}{\sin x} =$$

Hint on next page

$\sin 4x =$

$\sin(\underset{2}{2} \cdot \underset{A}{2x}) =$

$2 \sin \underline{2x} \cos \underline{2x}$