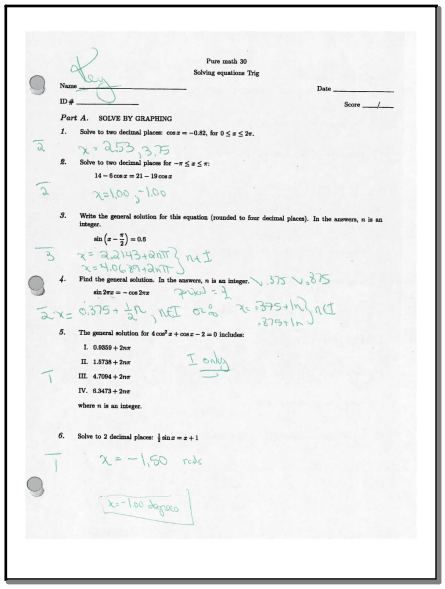


Pure math 30

Solving equations Trig

Name _____ Date _____

ID # _____ Score ___/___

Part A. SOLVE BY GRAPHING

1. Solve to two decimal places: $\cos x = -0.82$, for $0 \le x \le 2\pi$.

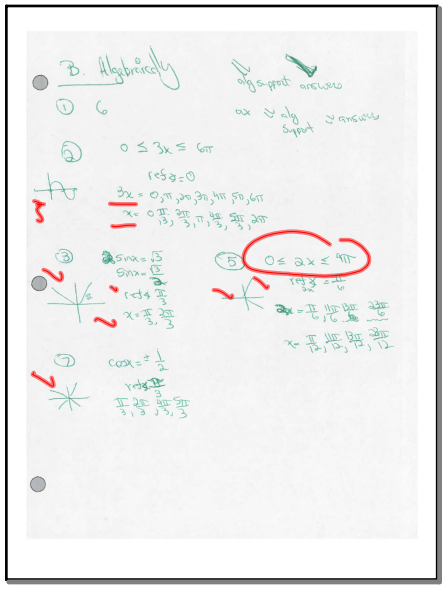
2. Solve to two decimal places for $-\pi \le x \le \pi$:
$14 - 6\cos x = 21 - 19\cos x$

3. Write the general solution for this equation (rounded to four decimal places). In the answers, n is an integer.
$\sin\left(x - \frac{\pi}{3}\right) = 0.6$

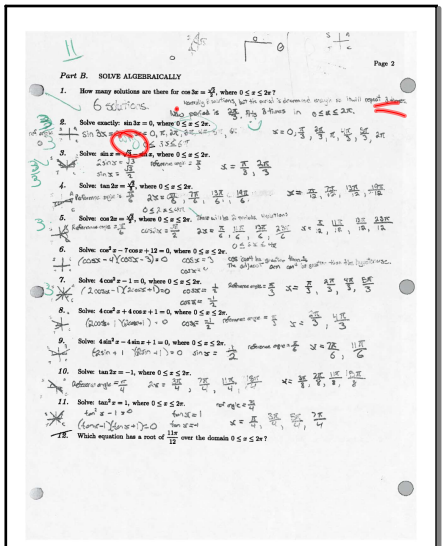
4. Find the general solution. In the answers, n is an integer.
$\sin 2\pi x = -\cos 2\pi x$

5. The general solution for $4\cos^2 x + \cos x - 2 = 0$ includes:
I. $0.9859 + 2n\pi$
II. $1.5738 + 2n\pi$
III. $4.7094 + 2n\pi$
IV. $6.3473 + 2n\pi$
where n is an integer.

6. Solve to 2 decimal places: $\frac{1}{2}\sin x = x + 1$



B. Algebraically



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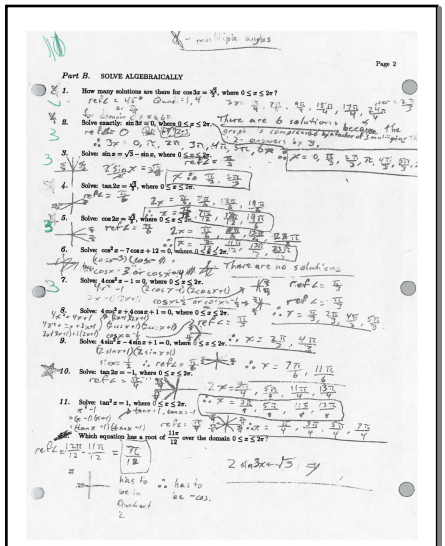
Part B. SOLVE ALGEBRAICALLY

1. How many solutions are there for $\cos 3x = \frac{\sqrt{2}}{2}$, where $0 \le x \le 2\pi$?
2. Solve exactly: $\sin 3x = 0$, where $0 \le x \le 2\pi$.
3. Solve: $\sin x = \sqrt{3}\sin x$, where $0 \le x \le 2\pi$.
4. Solve: $\tan 2x = \frac{\sqrt{3}}{3}$, where $0 \le x \le 2\pi$.
5. Solve: $\cos 2x = \frac{\sqrt{3}}{2}$, where $0 \le x \le 2\pi$.
6. Solve: $\cos^2 x - 7\cos x + 12 = 0$, where $0 \le x \le 2\pi$.
7. Solve: $4\cos^2 x - 1 = 0$, where $0 \le x \le 2\pi$.
8. Solve: $4\cos^2 x + 4\cos x + 1 = 0$, where $0 \le x \le 2\pi$.
9. Solve: $4\sin^2 x - 4\sin x + 1 = 0$, where $0 \le x \le 2\pi$.
10. Solve: $\tan 2x = -1$, where $0 \le x \le 2\pi$.
11. Solve: $\tan^2 x = 1$, where $0 \le x \le 2\pi$.
12. Which equation has a root of $\frac{11\pi}{12}$ over the domain $0 \le x \le 2\pi$?



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