

Mark each of the first nine statements as true or false. In question ten draw the required graph.

T 1. If events  $A$  and  $B$  are complementary then  $P(A) + P(B) = 1$ .

F 2. If  $x \in [\frac{\pi}{2}, \pi]$  then  $\arcsin(\sin x) = x$ .



T 3. The fourth roots of unity are  $\pm 1, \pm i$ .  $z^4 = 1$

T 4. If events  $A$  and  $B$  are independent with  $P(A) = 0.3$  and  $P(B) = 0.5$  then  $P(A \cup B) = 0.65$ .

$$P(A \cup B) = P(A) + P(B) - P(A \cap B) = 0.3 + 0.5 - 0.15 = 0.65$$

F 5. The function  $f(x) = 1 + 2 \cos x + 3 \cos 2x + 4 \sin x \sin 3x$  is neither odd nor even.

$$0.3 + 0.5 - 0.15 = 0.65$$

T 6. If  $P(A) = 0.3$  and  $P(B) = 0.4$  then  $0.1 \leq P(A' \cap B) \leq 0.4$ .

$$P(A') = 0.7$$

$$(0.1 - 0.28 = 0.18) \rightarrow 0.4$$

F 7. The function  $f: \mathbb{R} \rightarrow [0, 1]$  with rule  $f(x) = x - [x]$  is surjective but not injective.

doesn't include 0 and 1

T 8.  $101_2 + 1011_2 = 10000_2$ .

$$5 + 11 = 16$$

$$\frac{y-0}{2} = \cos\left(\frac{x-1}{\pi}\right)$$

$$\left(\frac{1}{3} \ 2\right) \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$\cos[\pi(x-1)] = \frac{1}{2}$$

T 9. The equation  $2 \cos(\pi(x-1)) = 1$  has 5 solutions in the interval  $[0, 5]$ .

$$\pi(x-1) = \frac{\pi}{3} \pm 2k\pi$$

$$\sum \frac{\pi}{3} \pm 2k\pi$$

10. Draw the graph of  $f(x) = \frac{1-2x}{1+x}$  in the window below. Be sure to indicate any key features.

$$\frac{-2x+1}{x+1}$$

$$x = -1$$

$$y = -2$$

$$x-1 = \frac{1}{3} \pm 2k/\frac{5}{3} \pm 2k$$

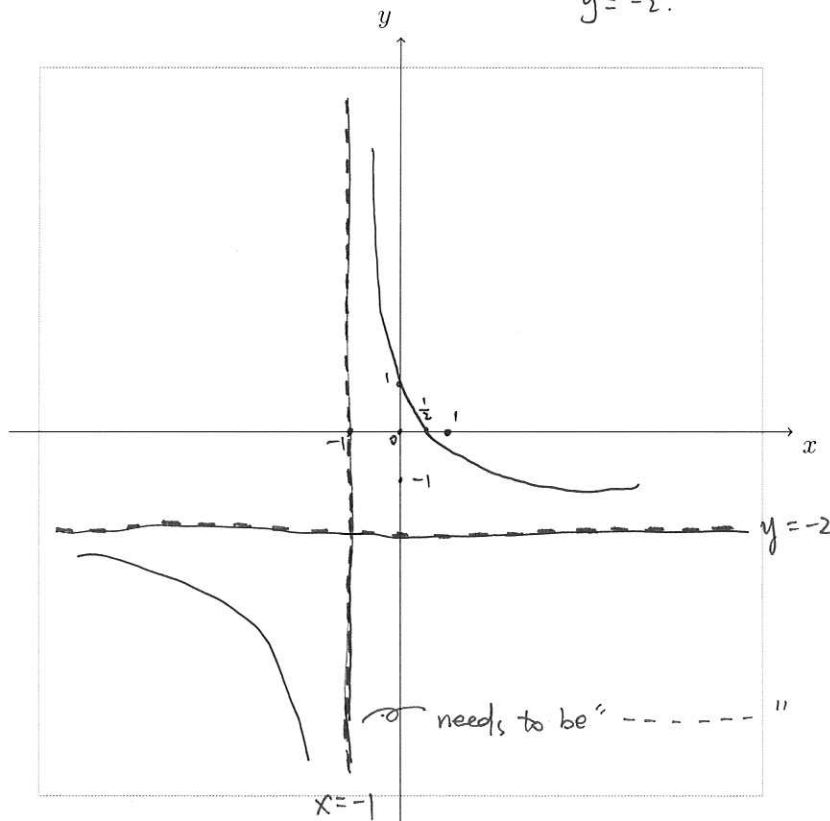
$$x = \frac{4}{3} \pm 2k$$

$$\left(\frac{8}{3} \pm 2k\right)$$

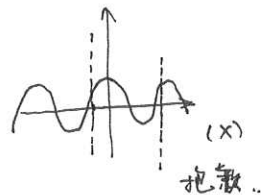
$$\frac{2}{3} \cdot \frac{4}{3} \cdot \frac{8}{3} \cdot \frac{10}{3} \cdot \frac{14}{3}$$

你都要写 ± ...

$$\cos(\pi(x-1)) = \frac{1}{2}$$



needs to be " - - - - - "



抱歉..

