

Name: _____

Section: _____

Zid: _____

1. Only a basic **non-text capable, non-graphing** calculator is permitted.
2. **Graphing calculators, cell phones and pdas shall be stowed out of sight.**
IF VISIBLE YOU WILL BE DEEMED TO BE CHEATING AND WILL RECEIVE A ZERO SCORE FOR THE EXAM!!!
3. Clearly show sufficient work to justify your answers.
4. Check that your exam contains exactly 20 problems.
5. Each problem is worth 5 points.

[1A] What is the period of $f(x) = -3 \sin(7\pi x - 4)$?

[2A] What is the phase shift of $f(x) = -3 \sin(7\pi x - 4)$?

[3A] What is the amplitude of $f(x) = -3 \sin(7\pi x - 4)$?

[4A] Simplify and evaluate $\sin\left(\frac{7\pi}{30}\right)\cos\left(\frac{8\pi}{30}\right) + \cos\left(\frac{7\pi}{30}\right)\sin\left(\frac{8\pi}{30}\right)$

For the next two problems:

$$\sin A = \frac{2}{5} \text{ with } \frac{\pi}{2} < A < \pi \quad \text{and} \quad \sin B = -\frac{1}{4} \text{ with } \pi < B < \frac{3\pi}{2}$$

[5A] Find the exact value of $\cos(A + B)$:

[6A] Find the exact value of $\sin(A - B)$:

[7A] Find the exact value of $\sin(-75^\circ)$:

[8A] Solve $4 \sin(x) \cos(x) = -\sqrt{3}$.

[9A] Find all angles θ in the range $70^\circ \leq \theta \leq 430^\circ$ for which $\sin(\theta) = -\sqrt{3} \cos(\theta)$.

[10A] Simplify $\sin^{-1}[\sin(\frac{11\pi}{4})]$.

[11A] Solve $\cos^2(\theta) + 8 \cos(\theta) = 9$.

[12A] I want to construct a triangle with sides of length a, b, c opposite angles A, B, C respectively. If I want $a = 3, b = 5$ and $c = 7$: either find $\cos(B)$ or state that “No such triangle exists”.

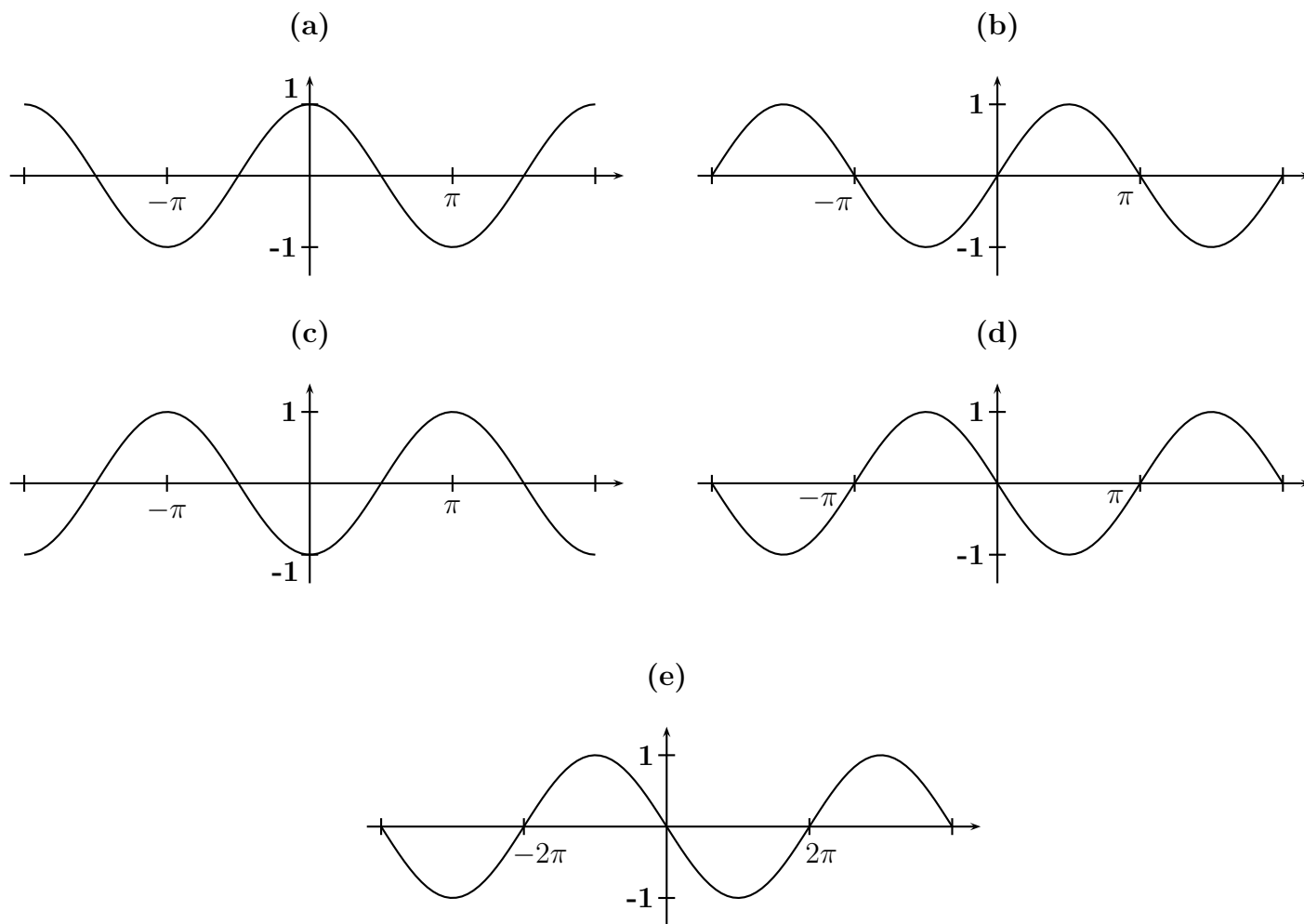
[13A] I want to construct a triangle with sides of length a, b, c opposite angles A, B, C respectively. If I want $a = 7, b = 9$ and $c = 13$: either find $\cos(B)$ or state that “No such triangle exists”.

[14A] I want to construct a triangle with sides of length a, b, c opposite angles A, B, C respectively. If I want $\sin(A) = \frac{1}{10}, \sin(B) = \frac{1}{11}$ and $a = 7$; Find b .

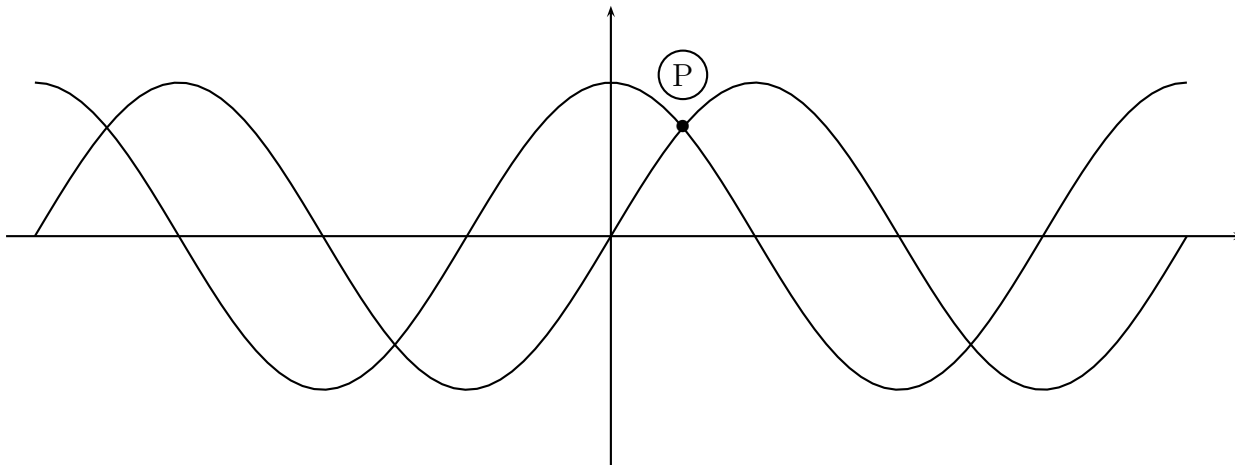
[15A] Simplify $\tan[\tan^{-1}(17\pi)]$.

[16A] I want to construct a triangle with sides of length a, b, c opposite angles A, B, C respectively. If I want $a = 8, b = 3$ and $B = \sin^{-1}(\frac{1}{3})$, give all possible values for A .

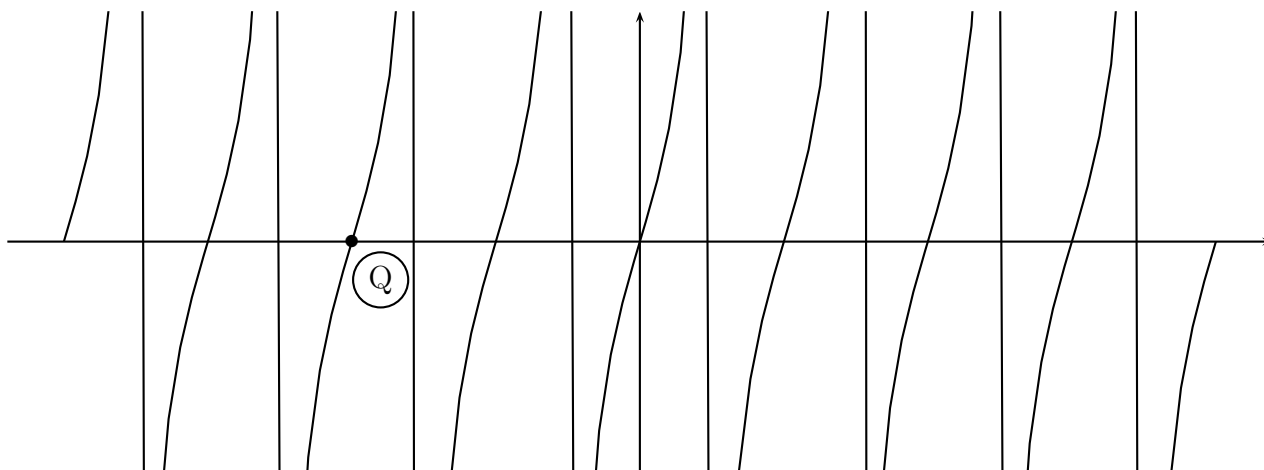
[17A] Which is the graph of $y = \cos x$?



[18A] In the following graph of both $y = \cos(x)$ and $y = \sin(x)$, give the coordinates of the point P :



[19A] In the following graph of $y = \tan(x)$, give the coordinates of the point Q .



[20A] What is the area of the triangle with sides $a = 6$, $b = 17$ and included angle $\theta = \frac{\pi}{6}$?