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.

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[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:

$\sin A = \frac{2}{5}$ with $\frac{\pi}{2} < A < \pi$ and $\sin B = -\frac{1}{4}$ 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 \(\theta\) 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 $B = \sin^{-1}\left(\frac{1}{3}\right)$, give all possible values for $A$.

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

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

![Graph of \( y = \cos(x) \) and \( y = \sin(x) \)]

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

![Graph of \( y = \tan(x) \)]

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