

Course Sign up information 08-09 for AP Calculus AB:Precalculus skills that are needed at any moment in AP Calculus AB

1. Solve for x: $25x^2(4+x^2)^{\frac{3}{2}} + 6x(4+x^2)^{\frac{1}{2}} = 0$

2. Write as a piecewise function and sketch: $f(x) = |x^2 - 4x - 5|$

3. Simplify $\frac{\frac{1}{\sqrt{x}} - \frac{1}{\sqrt{w}}}{x - w}$

4. Sketch the following, without using your calculator, and identify domain and range:

a. $y = \sin^{-1} x$

b. $y = x^{\frac{2}{3}}$

c. $y = \frac{x}{|x|}$

5. Sketch the following, without using your calculator, and identify the domain, range and all asymptotes.

a. $f(x) = \frac{(x+4)^2(x-2)}{(x+6)(x-2)}$

b. $f(x) = -(x+4)^3(x-2)^2(x+1)$

*c. $f(x) = \ln|x+1|$

*d. $f(x) = e^{x^2} + 1$ (These are more challenging)

6. Sketch the angle, identify a reference angle and find the exact value: $\sin \frac{2\pi}{3}$

7. Given that $\sin x = \frac{3}{5}$, $0 < x < \frac{\pi}{2}$, find $\sin 2x$

8. Solve $\sin^2 x - \cos^2 x = 0$ on $[0, 2\pi)$

9. Solve the equation without using your calculator: $y^3 - 2y + 1 = 0$.

10. Solve

a. $\ln(x^2 + 4) - \ln(x + 2) = 2 + \ln(x - 2)$

b. $5^x + 125 \cdot 5^{-x} = 30$

See the solutions on the main page of the Math Website. If these seem challenging, sign up for the summer course: [THE ALGEBRA OF CALCULUS](#)

Advice from AP Calculus AB students:

- Plan to study!
- Do homework!
- Keep your Precalc textbook and notes!
- If you do well on the Precalculus final and review early, then calculus will seem easy.