Remember your trig formulas

Pythagorean identities:

$$\sin^2 x + \cos^2 x = 1$$
$$\tan^2 x + 1 = \sec^2 x$$
$$1 + \cot^2 x = \csc^2 x$$

Sum and difference formulas:

$$\sin(a \pm b) = \sin a \cos b \pm \cos a \sin b$$
$$\cos(a \pm b) = \cos a \cos b \mp \sin a \sin b$$
$$\tan(a \pm b) = \frac{\tan a \pm \tan b}{1 \mp \tan a \tan b}$$

Double angle formulas:

$$\sin(2a) = 2\sin a \cos a$$
$$\begin{aligned}\cos(2a) &= \cos^2 a - \sin^2 a \\ &= 2\cos^2 a - 1 \\ &= 1 - 2\sin^2 a\end{aligned}$$
$$\tan(2a) = \frac{2\tan a}{1 - \tan^2 a}$$

Half angle formulas:

$$\sin\left(\frac{a}{2}\right) = \pm\sqrt{\frac{1-\cos(a)}{2}}$$
$$\cos\left(\frac{a}{2}\right) = \pm\sqrt{\frac{1+\cos(a)}{2}}$$
$$\tan\left(\frac{a}{2}\right) = \pm\sqrt{\frac{1-\cos a}{1+\cos a}}$$

Domains and Ranges of Trig Functions:

$f(x) = \sin x$

Domain: All real numbers
Range: [–1, 1]

$f(x) = \cos x$

Domain: All real numbers
Range: [–1, 1]

$f(x) = \tan x$

Domain: $x \neq k\frac{\pi}{2}$, k any integer
Range: All real numbers

$f(x) = \csc x$

Domain: $x \neq k\pi$, k any integer
Range: $(-\infty, -1] \cup [1, \infty)$

$f(x) = \sec x$

Domain: $x \neq k\frac{\pi}{2}$, k any integer
Range: $(-\infty, -1] \cup [1, \infty)$

$f(x) = \cot x$

Domain: $x \neq k\pi$, k any integer
Range: All real numbers

Principal Inverse trig functions:

Arcsin(x)

Domain: [–1, 1]
Range: $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$ (first and fourth quadrants)

Arccos(x)

Domain: [–1, 1]
Range: $[0, \pi]$ (first and second quadrants)

Arctan(x)

Domain: All real numbers
Range: $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$ (first and fourth quadrants)

The other three inverse functions were purposefully omitted.

General info on arcs and sectors of circles:

Length of an arc of a circle intercepted by an angle a: $L = \frac{a}{2\pi} \cdot 2\pi r = ar$

Area of a sector of a circle intercepted by an angle a: $A = \frac{a}{2\pi}\pi r^2 = \frac{ar^2}{2}$