

8.6.17 The amplitude is the absolute value of $-1/2$:

$$A = \left| -\frac{1}{2} \right| = \frac{1}{2}.$$

The angular frequency is (the absolute value of) $3/2$, so the period is 2π divided by that:

$$T = \frac{2\pi}{|3/2|} = \frac{2\pi}{3/2} = \frac{4\pi}{3}.$$

8.6.43 Since the amplitude is 2, the range is the set of all numbers from -2 to 2 ; the domain is the set of all real numbers. In symbols,

$$\text{dom } f = (-\infty, \infty), \text{ ran } f = [-2, 2].$$

8.6.63 The period is 8, so the angular frequency is

$$\omega = \frac{2\pi}{8} = \frac{\pi}{4}.$$

Also, the amplitude is 5. Since this graph starts at the top, it uses the cosine (not the sine), so its equation is

$$y = 5 \cos\left(\frac{\pi}{4}x\right).$$