18. In class, there are 25 students: 11 girls (5 freshmen and 6 sophomores) and 14 boys (5 freshmen and 9 sophomores). (Sec. 11.3)

a. What is the probability that a randomly selected student is a girl **or** a sophomore?

$\frac{11}{25} + \frac{15}{25} - \frac{6}{25} = \frac{20}{25} = \frac{4}{5}$

6 girls, 10th sophomores, both

b. What is the probability that a randomly selected student is a girl **and** a sophomore?

look for overlap

	Boy	Girl	Total
9th	5	5	10
10th	9	6	15
	14	11	25

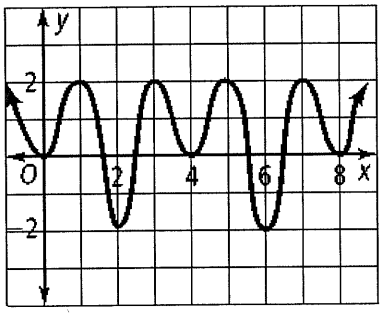
$\frac{6}{25}$

19. Explain the key difference between a **permutation** and a **combination.** (Sec. 11.1)

order matters

order doesn't matter

20. Determine the period and altitude of the following periodic function. (Sec. 13.1)



period: 4
amp: 2

21. Using a unit circle, determine the following values. (Sec. 13.2 and 13.3)

a. $\cos 120°$

$-\frac{1}{2}$

b. $\sin\frac{5\pi}{3}$

$-\frac{\sqrt{3}}{2}$

c. $\tan\frac{3\pi}{4}$

-1

d. $\tan -450°$

undefined