

### Calculus — Problem Set 17

2.  $P = 800w^{-1} + 2w$

4.  $-\infty$

6. 0

8.  $-\infty$

10. undefined

12. 0

14.  $x = \frac{1}{2}$

16. Amplitude: 3

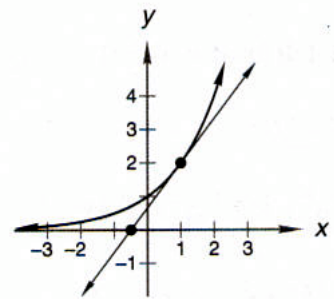
Period:  $\frac{2\pi}{4} = \frac{\pi}{2}$

Centerline:  $y = -2$

18.  $\cos(2x)$

20.  $\frac{6\sqrt{5}}{5}$

22.



Answers vary:  $(1, 2)$ ,  
 $(-0.5, 0)$

slope  $\approx \frac{4}{3}$

24.  $x + y + z = 180^\circ$   
 $y + a + b = 180^\circ$   
C: They are equal

### Calculus — Problem Set 18

2.  $F = 40,000P^{-1} + P$

4. 52

6.  $\{x \in R | x > 1\}$

8. Domain:  
 $\{x \in R | x \geq 1\}$

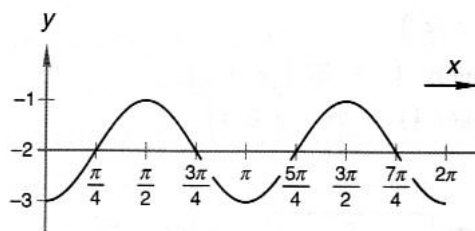
Range:  
 $\{y \in R | y \geq 1\}$

10.  $-\frac{1}{3}$

12. undefined

14. no solution

16.



18.  $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$

The function is  
undefined at  $x = 0$ .

20. If  $x^2$  does not equal 4,  
then  $x$  does not equal  
2.

22.  $x = \frac{\ln(637)}{\ln\left(\frac{343}{13}\right)} \approx 1.9729$

24. Area =  $\sin(2x)$