1. $8\pi/9$

2. $\frac{128}{5}\pi$

3.

(a) $\mathbf{8\pi}$ (b) $\left(\frac{125}{2} - 5\sqrt{10}\right)\pi$

4. 405 J

5.

$$-\frac{7}{2\left(x^2+1\right)} + 2\tan^{-1}(x) \quad +C$$

6. $\frac{3\pi}{4}$

7.

$$C + \frac{3}{10}e^{-\theta}\sin(3\theta) - \frac{1}{10}e^{-\theta}\cos(3\theta)$$

8.

$$C + \frac{4\tan^9(x)}{9} + \frac{8\tan^7(x)}{7} + \frac{4\tan^5(x)}{5}$$

9.

$$C - \frac{x}{2} + x\ln\left(\sqrt{x}\right)$$

10.

$$C - \frac{1}{2}x\sqrt{9-x^2} + \frac{9}{2}\sin^{-1}\left(\frac{x}{3}\right)$$

11. D

12. C, $\ln 2$

13. C

14. C

15. C

16. C

17. C

18. $[-3,-1]$

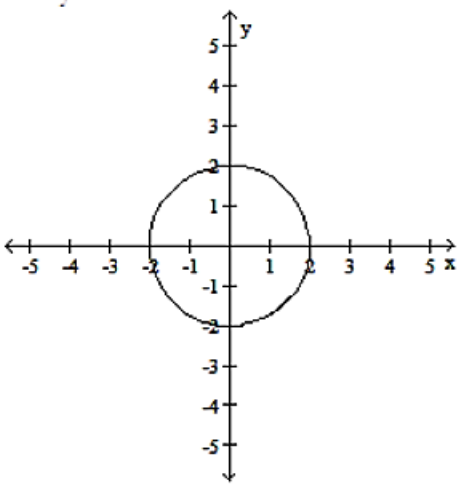
19. $[-2,2)$

20. $\sum_{n=0}^{\infty} \frac{(-1)^n(3x)^n}{n!}$

21. $\sum_{n=0}^{\infty} \frac{(-1)^n(4x)^{2n}}{(2n)!}$

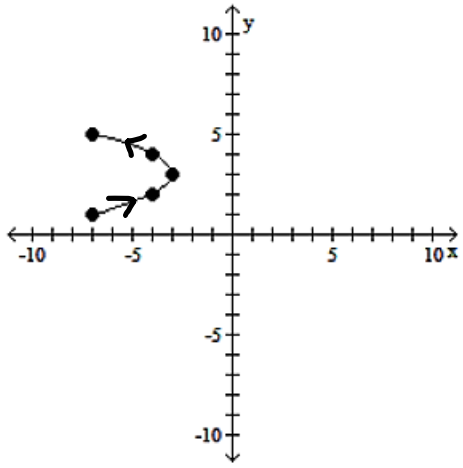
22.

$x^2 + y^2 = 4$



Counterclockwise from (2, 0) to (2, 0), one rotation

23. $x = -y^2 + 6y - 12$



24. $y = \frac{5}{14}x - \frac{1}{14}$

25. $y = x - 4\sqrt{2}$

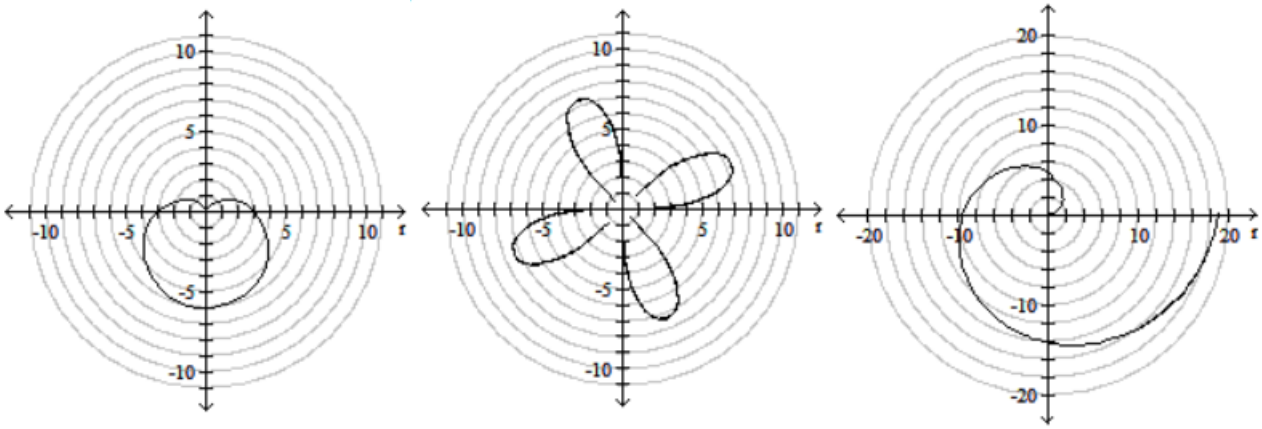
26. 8

27. (a) $\left(2\sqrt{2}, 45°\right), \left(-2\sqrt{2}, -135^{\circ}\right)$ answers may vary

(b) $\left(\frac{2}{5}, 60°\right)$, $\left(-\frac{2}{5}, 240°\right)$ answer may vary

28. (a) $r = \frac{1}{t\cos\theta - 8\sin\theta}$ (b) $r = 26\sin\theta$

29. (a) (b) (c)



30. (a) $\frac{1}{2}$ (b) $\frac{41}{4}\pi$

31. (a) 2π (b) $\frac{8}{3}\left[(\pi^2 + 1)^{3/2} - 1\right]$