

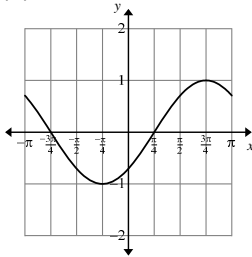
ANSWERS TO:  
ARE YOU READY FOR CALCULUS??

1. (a)  $\frac{x^2+3x}{x-4}$  (b)  $\frac{x-4}{x^2-x}$  (c)  $\frac{5x}{x+5}$  (d)  $\frac{3x-1}{x}$
2. (a)  $2(\sqrt{3}-\sqrt{2})$  (b)  $-1-\sqrt{5}$  (c)  $\frac{7+3\sqrt{3}+\sqrt{5}+2\sqrt{15}}{11}$
3. (a)  $8a^6b^{-1}$  (b)  $3a^{\frac{1}{2}}b^{\frac{3}{2}}$  (c)  $\frac{2}{3}a^2b^{-1}$  (d)  $ab^{-1}$  (e)  $a^{\frac{3}{2}}b$  (f)  $a^{\frac{5}{6}}b^{\frac{1}{2}}$
4. (a) 1 (b)  $-\frac{3}{2}$  (c) 8 (d)  $\pm\frac{4}{25}$
5. (a)  $\log_2(5(x+1))$  (b)  $\log_2 3$  (c)  $\log_3 5^6$
6. (a)  $\frac{1}{2}$  (b)  $-x$  (c)  $2\log_{10} x$
7. (a)  $\frac{bcx}{bc-cy-bz}$  (b)  $\frac{V-2bc}{2(b+c)}$  (c)  $\frac{-\pi h + \sqrt{\pi^2 h^2 + 2\pi A}}{2\pi}$   
 (d)  $\frac{A}{1+nr}$  (e)  $\frac{2x-y}{x+2y}$  (f)  $\frac{\pi}{\pi-1}$
8.  
 (a)  $y-(-1)=(x-(-2))^2$  (b)  $y-\frac{3}{8}=-\frac{3}{2}\left(x-\left(-\frac{1}{2}\right)\right)^2$  (c)  $x-(-10)=9\left(y-\frac{1}{3}\right)^2$
9. (a)  $x^4(x-4)(x+4)$  (b)  $(x-2)(2x-5)(2x+5)$   
 (c)  $(2x+3)(4x^2-6x+9)$  (d)  $(x-1)(x+1)(x^2+1)$
10. (a)  $0, \pm 4$  (b)  $2, \pm\frac{5}{2}$  (c)  $-\frac{3}{2}$
11. (a)  $\frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6},$  and  $\frac{11\pi}{6}$  (b)  $-\frac{\pi}{2}, \frac{\pi}{6},$  or  $\frac{5\pi}{6}$   
 (c)  $-\frac{\pi}{2}+2k\pi,$  or  $\frac{5\pi}{6}+2k\pi,$  where  $k$  is any integer

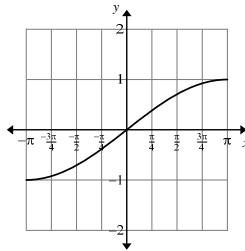
12. (a)  $-\frac{\sqrt{3}}{2}$       (b)  $-\frac{\sqrt{2}}{2}$       (c)  $-\frac{\pi}{4}$       (d)  $-\frac{\pi}{2}$   
 (e)  $\frac{\sqrt{2}}{2}$       (f)  $\frac{\pi}{3}$       (g)  $\frac{\sqrt{3}}{2}$       (h)  $\pi$

13.

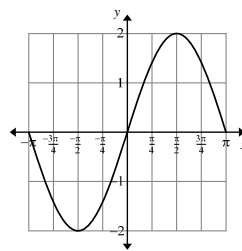
(a)



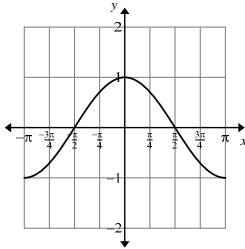
(b)



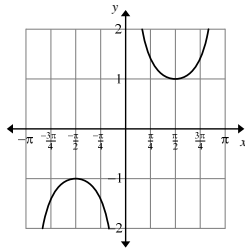
(c)



(d)



(e)



14. (a)  $\frac{-3 \pm \sqrt{6}}{2}$       (b)  $\frac{1}{2}$  or  $-3$       (c)  $-\frac{1}{2}$

15. (a)  $-89$

(b)  $x^2 + 3$

16. (a)  $-\frac{1}{3}$  or  $\frac{1}{4}$

(b)  $-\frac{1}{2}, -\frac{1}{2},$  or  $\frac{1}{3}.$

17. (a)  $-3 \leq x \leq 1$

(b)  $x < \frac{2}{3}$  or  $x \geq 1$

(c) all  $x$

18. (a)  $2$  or  $-\frac{6}{5}$

(b)  $-\frac{4}{3}$  or  $2$

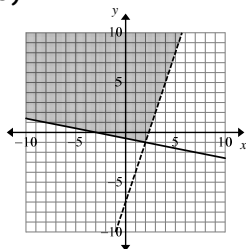
19. (a)  $7x + 3y = 2$

(b)  $3x + 2y = 1$

(c)  $y = 3$

20. (a)  $(2, -1)$

(b)



21. (a)  $(x-1)^2 + (y+2)^2 = 18$       (b)  $\left(x - \frac{1}{2}\right)^2 + (y-1)^2 = \frac{5}{4}$

22. (a) center =  $(-3, 2)$ ; radius =  $\sqrt{10}$       (b)  $x + 3y = 13$

23. (a) 9      (b)  $(x-5)^2 + (y-3)^2 = 25$

24.  $8x^2 - 38x + 8y^2 + 20y + 43 = 0$  (a circle)

25. (a)  $x < -2$  or  $x > 1$

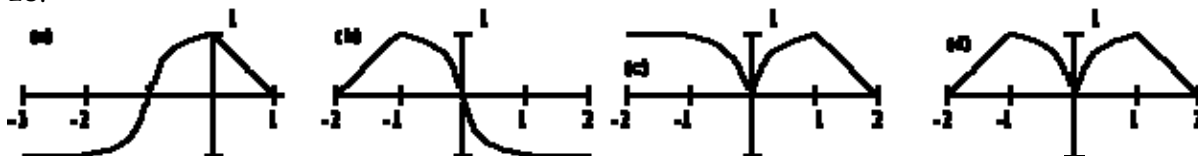
(b) i) D: all numbers; R:  $\{7\}$

ii) D: all numbers except  $-\frac{1}{2}$ , R: all numbers except  $\frac{5}{2}$

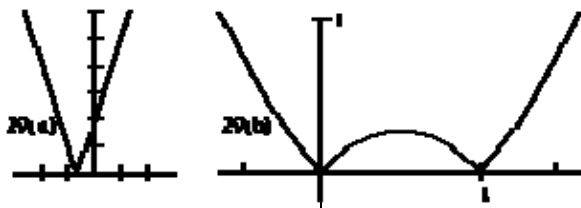
26. D: all numbers except 0; R:  $\{-1, 1\}$

27. (a) 2      (b)  $\frac{-1}{(x+1)(x+h+1)}$       (c)  $2x+h$

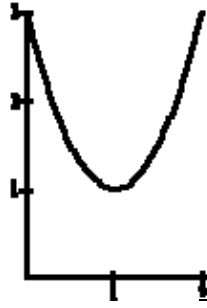
28.



29.



30.

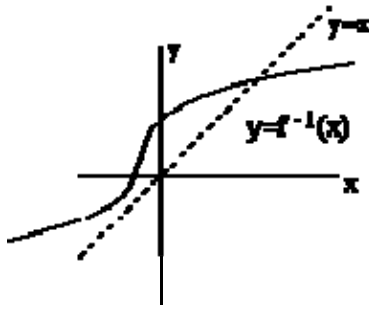


(a)  $y = -x^2 + 2x + 3$  (b)

31. (a)  $y = x^2 - 3x + 2$  (b)  $x(x^2 + 3x + 3)(x + 1)^3$  (c)  $x^2 + y^2 = 1$

32. (a)  $f^{-1}(x) = \frac{x-3}{2}$  (b)  $f^{-1}(x) = \frac{x+2}{5x-1}$  (c)  $f^{-1}(x) = -1 + \sqrt{x+2}, x > -1$

33.



34. (a)  $x = t \left( \frac{r-h}{h} \right)$  (b)  $x = \frac{rt}{\sqrt{r^2 - h^2}}$

35. (a)  $1 - \frac{\pi}{4}$  (b)  $4r + \pi r$  (c)  $\frac{9\pi}{4} \text{ m}^2$  (d)  $100\sqrt{5} \text{ km}$  (e)  $\frac{\pi}{6}$  or  $30^\circ$

36.

(a)  $1 = \cos(x-x) = \dots$  (b) Use D. (c) Use B.  
 (d) Use (c) then (a). (e) Use (c) then (a).