

4.1 - 4.5 Review Key

- 1) -45
- 2) $75x^2$
- 3) $\sqrt{x^2 - 5}$
- 4) $3x^2 + 5x$
- 5) $-x^2 + 5x + 1$
- 6) $15x^3$

7) $\sqrt{5x^2 - 9}$

8) $\frac{3x^2}{x^2 - 1}$

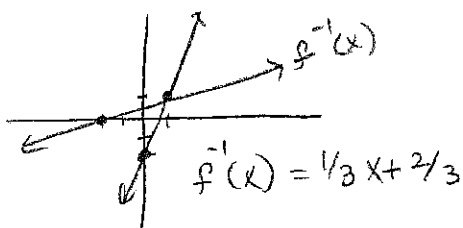
9) a) Radical over the -4

$$\sqrt{3(x^2 - 1)^2 - 4}$$

h of $\circ k(x)$

b) $g \circ h \circ k(x)$

19)



20) $r = \sqrt{\frac{A}{\pi}}$

$r = \frac{1}{\sqrt{\pi}} \sqrt{\frac{A}{\pi}}$

$r = \frac{1}{\sqrt{\pi}} \cdot \frac{\sqrt{A}}{\sqrt{\pi}}$

21) NO $= \frac{4A\sqrt{A}}{3\sqrt{\pi}} = \frac{4A\sqrt{A\pi}}{3\pi}$

D: $x < 1$

R: Reals

22) Yes

D: $-3 < x \leq 3$
 $x \neq 0$

R: $-2 < y < 2$

23) a) Zeros -1, -4

D: Reals

R: $y \geq -2.25$

b) Zeros: 2, -2

D: $x > 2$ or $x < -2$

R: $y \geq 0$

28) $-b/2a$: $x = 2$ $(2, -11)$
 $y = -11$

$-b/3a$: $x = -\frac{2}{3} \cdot 4 = -\frac{8}{3}$
 $y = -\frac{2}{3} \cdot 23 = -\frac{46}{3}$

24) a) $(x, -y)$ yes

b) $(-x, y)$ yes

c) (y, x) yes

d) $(-x, -y)$ yes

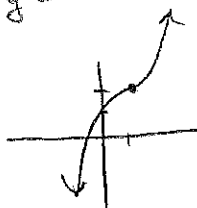
25)



D: Reals

R: $y \geq -3$

27)



D: Reals R: Reals

29) $y = a(x-h)^2 + k$

$-4 = a(-3-1)^2 - 1$

$a = -3/16$

$y = -3/16(x-1)^2 - 1$

30) $y = a\sqrt{x-h} + k$

$-2 = a\sqrt{2-1} + 2$

$a = -4$

$y = -4\sqrt{x-1} + 2$

31) a) 3

b) 10

c) 13

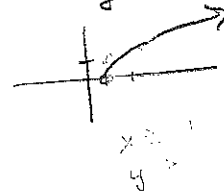
32) $f^{-1}(x) = -\sqrt{x-1} + 3$

D: $x \geq 1$
 $y \leq 3$

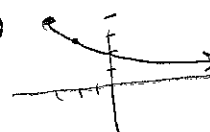


b) $g^{-1}(x) = \sqrt{x-1}$

D: $x \geq 1$
 $y \geq 0$



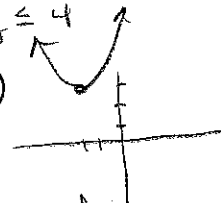
26)



D: $x \geq -3$

$y \leq 4$

28)



D: Reals

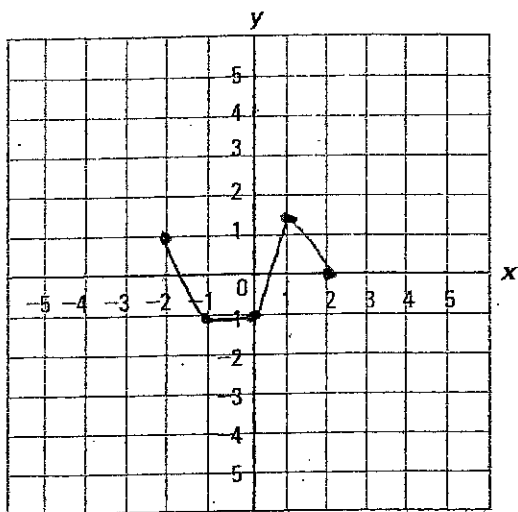
R: $y \geq 3$

33) $p = 5$

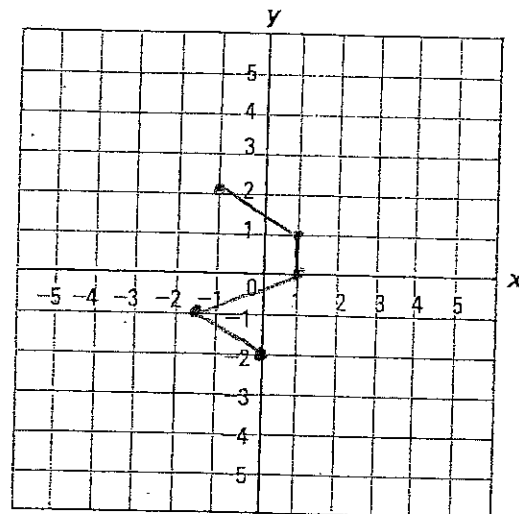
$f(2013) = f(3) = 5$

$\frac{2013}{5} = 402 \text{ r } 3$

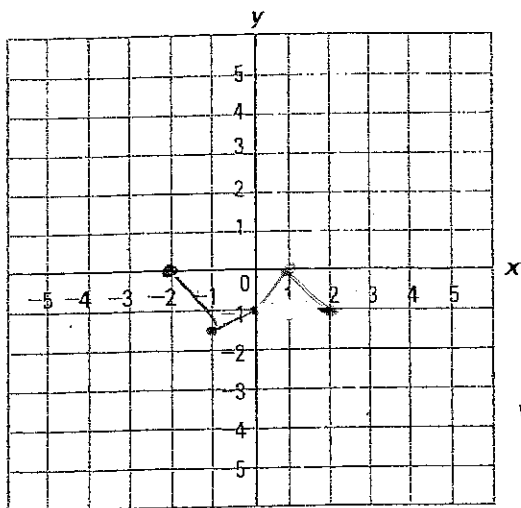
14)



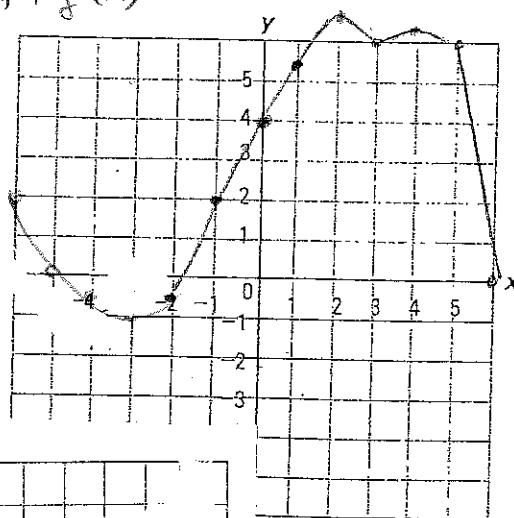
15)



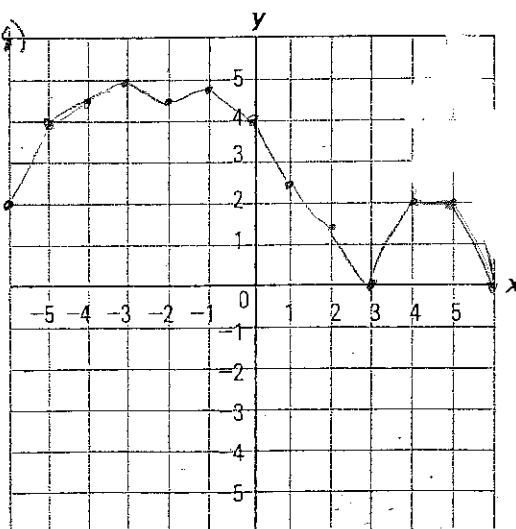
16)

 $f+g(x)$

17)

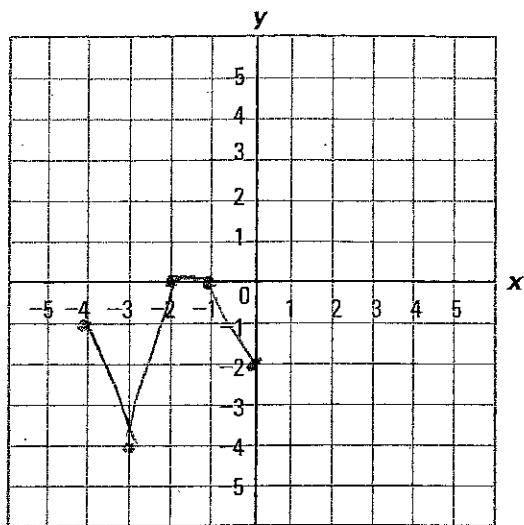


18)

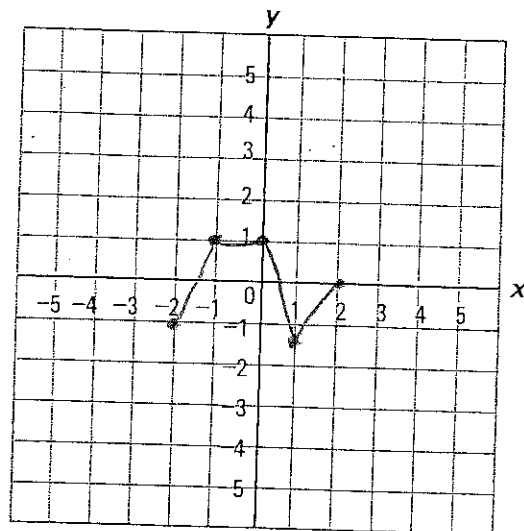


Key

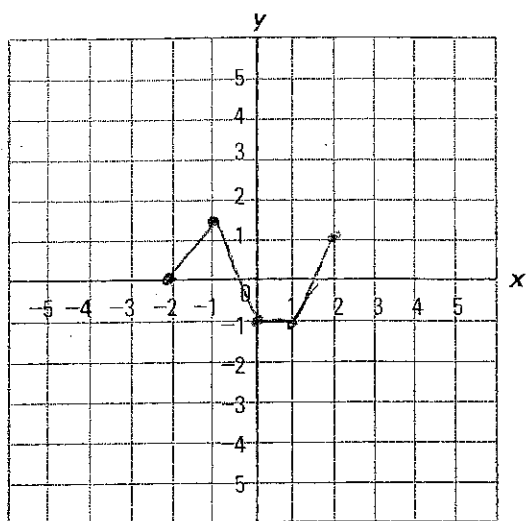
10)



11)



12)



13)

