

p 396 10 - 38 even

⑩ $\{(7,7), (9,4), (-7,3)\}$

⑫ $\{(3,4), (-4,-4), (-5,-3), (2,5)\}$

⑭ $\{(0,3), (4,5), (-8,7), (12,9), (16,11)\}$

⑮ $g(x) = 5x$

$$x = 5y$$

$$y = \frac{1}{5}x$$

$$g^{-1}(x) = \frac{1}{5}x$$

⑱ $h(x) = \frac{x-4}{3} \quad \frac{1}{3}x - \frac{4}{3}$

$$3x = \frac{y-4}{3}$$

$$3x = y - 4$$

$$y = 3x + 4$$

$$h^{-1}(x) = 3x + 4$$

⑳ $g(x) = x + 4$

$$x = y + 4$$

$$y = x - 4$$

$$g^{-1}(x) = x - 4$$

㉒ $f(x) = -8x + 9$

$$x = -8y + 9$$

$$x - 9 = -8y$$

$$y = \frac{-x + 9}{8}$$

$$f^{-1}(x) = \frac{-x + 9}{8}$$

㉔ $h(x) = x^2 + 4$

$$x = y^2 + 4$$

$$\sqrt{x-4} = \sqrt{y^2}$$

$$y = \pm \sqrt{x-4}$$

$$h^{-1}(x) = \pm \sqrt{x-4}$$

㉖ $f(x) = (x+1)^2 + 3$

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

$$\sqrt{x-3} = \sqrt{(y+1)^2}$$

$$\pm \sqrt{x-3} = y+1$$

$$y = \pm \sqrt{x-3} - 1$$

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

㉘ $f(x) = 4x + 6 \quad g(x) = \frac{x-6}{4}$

$$(f \circ g)(x) = 4\left(\frac{x-6}{4}\right) + 6 \quad (g \circ f)(x) = \frac{4x+6-6}{4}$$

$$= x - 6 + 6$$

$$= x$$

$$= \frac{4x}{4}$$

$$= x$$

yes

$$(30) f(x) = -6x \quad g(x) = \frac{1}{6}x$$

$$(f \circ g)(x) = -6\left(\frac{1}{6}x\right) \\ = \boxed{-x}$$

$$(g \circ f)(x) = \frac{1}{6}(-6x) \\ = \boxed{-x}$$

no

$$(32) f(x) = \frac{x+10}{8} \quad g(x) = 8x-10$$

$$(f \circ g)(x) = \frac{8x-10+10}{8} \\ = \frac{8x}{8}$$

$$= \boxed{x}$$

$$(g \circ f)(x) = 8\left(\frac{x+10}{8}\right) - 10 \\ = x + 10 - 10$$

$$= \boxed{x}$$

yes

$$(34) f(x) = \frac{1}{3}x^2 + 1 \quad g(x) = \sqrt{3x-3}$$

$$(f \circ g)(x) = \frac{1}{3}(\sqrt{3x-3})^2 + 1 \\ = \frac{1}{3}(3x-3) + 1$$

$$= x - 1 + 1$$

$$= \boxed{x}$$

$$(g \circ f)(x) = \sqrt{3\left(\frac{1}{3}x^2 + 1\right) - 3}$$

$$= \sqrt{x^2 + 3 - 3}$$

$$= \sqrt{x^2}$$

$$= \boxed{x}$$

yes

$$(36) f(x) = \frac{2}{3}x^3 \quad g(x) = \sqrt{\frac{2}{3}x}$$

$$(f \circ g)(x) = \frac{2}{3}\left(\sqrt{\frac{2}{3}x}\right)^3$$

$$(g \circ f)(x) = \sqrt{\frac{2}{3}\left(\frac{2}{3}x^3\right)}$$

$$= \sqrt{\frac{4}{9}x^3}$$

$$= \frac{2}{3}\sqrt{x^3}$$

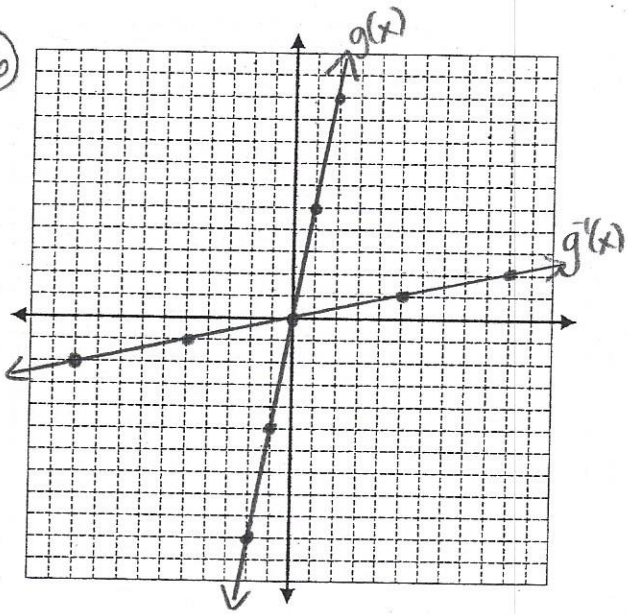
no

$$(38) f(x) = 2\sqrt{x-5} \quad g(x) = \frac{1}{4}x^2 - 5$$

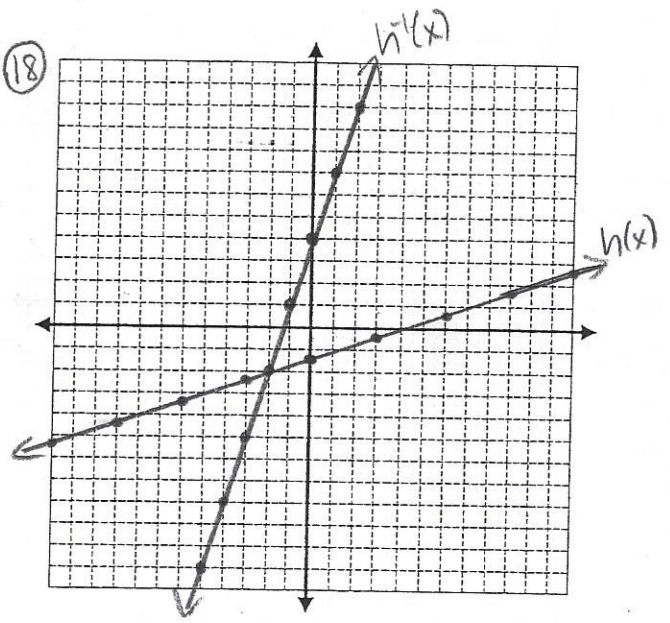
$$(f \circ g)(x) = 2\sqrt{\frac{1}{4}x^2 - 5 - 5}$$

no

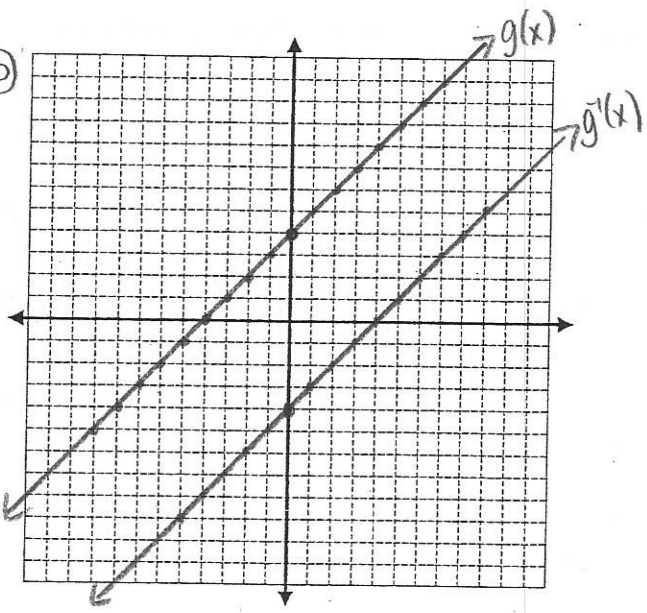
16



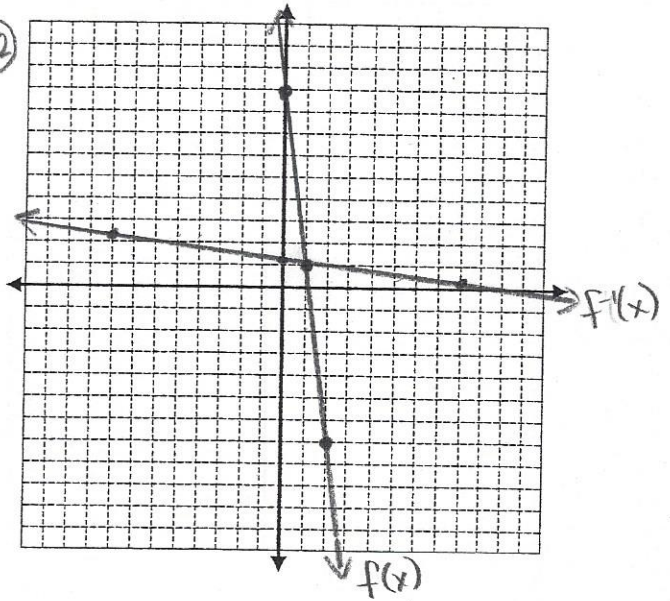
18



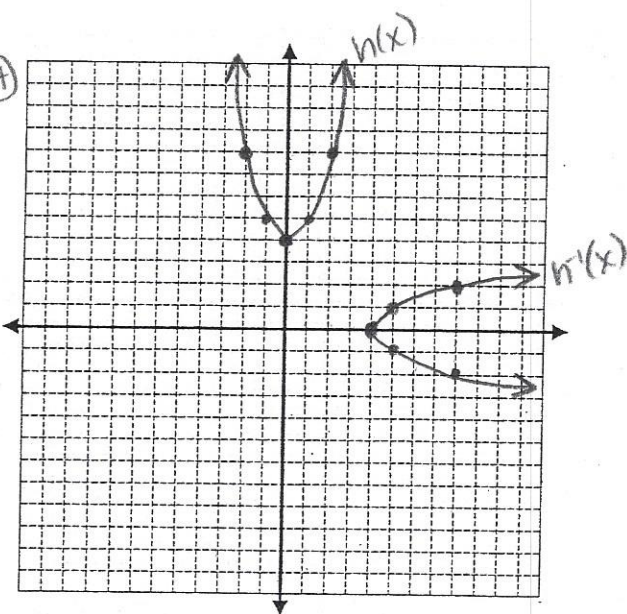
20



22



24



26

