Solve:

Factor

1. $x^2+7x+10$

2. $(2^4+4)\div 5\times 3-7+4$

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Operations

With +

= Functions

Function Notation

$$f(x) = 3x^2 - x + 2$$

y = f(x) y is a function of x

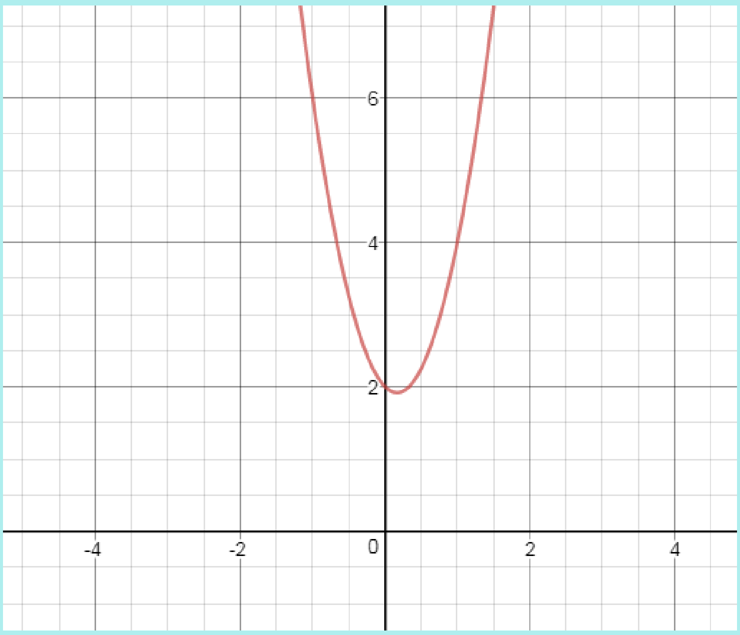
evaluate:

$f(-3)$ $f(0) = 2$ $f(4) = 46$

$f(-3) = 3(-3)^2 - (-3) + 2$

$f(-3) = 32$

x	f(x)
-3	32

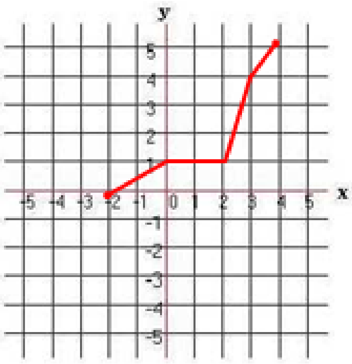


Operations With Functions

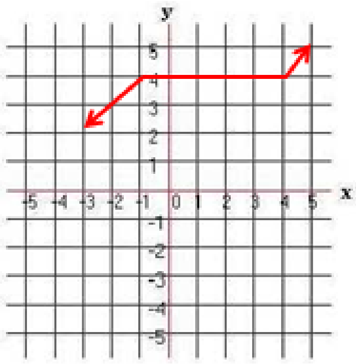
Operations

- Sum: $(f+g)(x) = f(x) + g(x)$
- Difference: $(f-g)(x) = f(x) - g(x)$
- Product: $(f \bullet g)(x) = f(x) \bullet g(x)$
- Quotient: $\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)}, \quad g(x) \neq 0$

Find: $f(2)+g(4)$

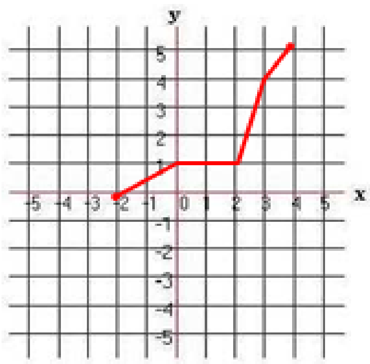


$f(x)$

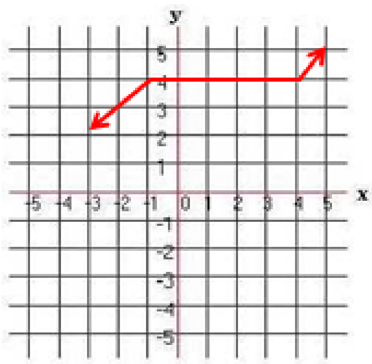


$g(x)$

Find: $f(-2)-g(-1)$



$f(x)$



$g(x)$

Given

$f(x) = x^2 - x + 2$

$g(x) = x^2 + x - 4$

f(x) + g(x)

$(x^2 - x + 2) + (x^2 + x - 4)$

$x^2 - x + 2 + x^2 + x - 4$

$2x^2 - 2$

g(x) + g(x)

$(x^2 + x - 4) + (x^2 + x - 4)$

$2x^2 + 2x - 8$

g(x) + f(x)

$f(x) = x^2 + 2x - 3$ $g(x) = x^2 - 3x + 4$

f(x)-g(x)

$(x^2+2x-3) - (x^2-3x+4)$

$x^2 + 2x - 3 - x^2 + 3x - 4$

$5x - 7$

g(x)-f(x)

$(x^2-3x+4) - (x^2+2x-3)$

$x^2 - 3x + 4 - x^2 - 2x + 3$

$-5x + 7$

$$f(x) = 3x + 7$$
$$g(x) = 2x - 1$$

$f + g$	$f - g$

$f(x) = 3x + 7$

$g(x) = 2x - 1$

f(x)=g(x)

$3x+7 = 2x-1$

$-2x$

$x+7 = -1$

-7

$x = -8$

f(x)=20

$3x+7 = 20$

-7

$3x = 13$

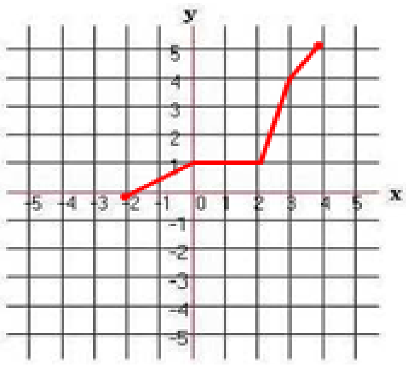
$x = \frac{13}{3}$

g(x)= 9

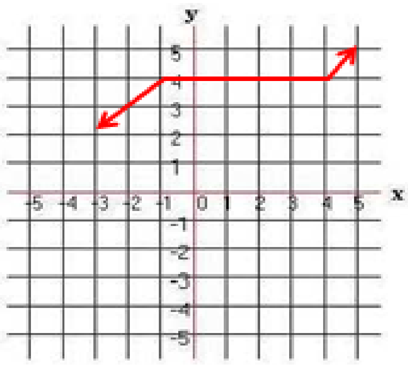
$$h(x) = x + 3$$
$$k(x) = 2x - 4$$

$h + k$	$h - k$
h(x)=g(x)	k(x)=23

Find: $f(4) \cdot g(-1)$

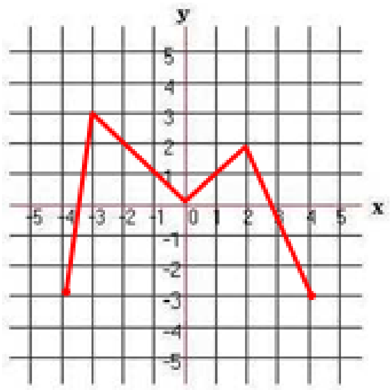


$f(x)$

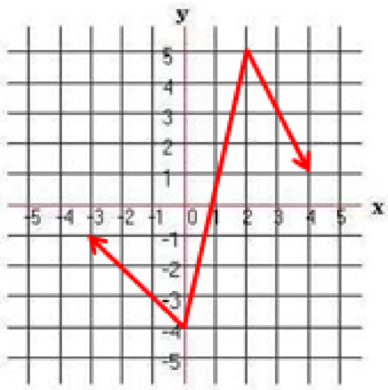


$g(x)$

Find: $f(-4) \cdot g(2)$



$f(x)$



$g(x)$

$f(x)=2x-3$ $g(x)= 3x-4$

f(x) * g(x)

$(2x-3)\cdot(3x-4)$

$6x^2-8x-9x+12$

$6x^2-17x+12$

f(x)/g(x)

$\frac{2x-3}{3x-4}$

$h(x) = x + 3$

$k(x) = 2x - 4$

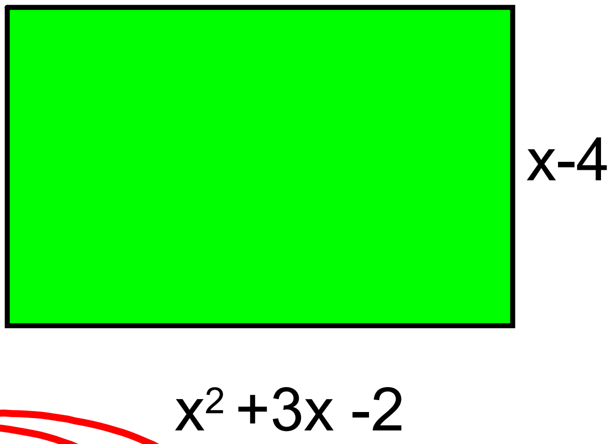
$h \bullet k$	$h \div k$

$$f(x) = \frac{2x-7}{3}$$

$$g(x) = 5x - 2$$

$f \bullet g$	$\frac{f}{g}$

Find the area



$(x-4)(x^2+3x-2)$

$x^3 + 3x^2 - 2x$

$\quad - 4x^2 - 12x + 8$

$x^3 - x^2 - 14x + 8$

Find the Area and Perimeter.