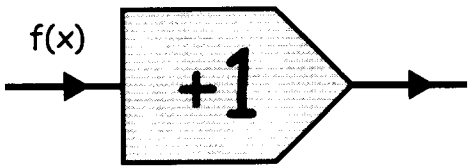
FUNCTIONS

Find the missing values for each function

Functions

$f(x) = x + 1$

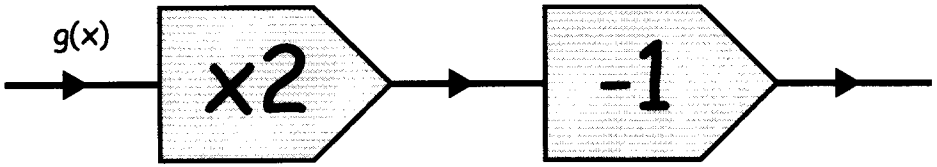


$f(2) = 2 + 1 = 3$

$f(5) =$

$f(10) =$

$g(x) = 2x - 1$

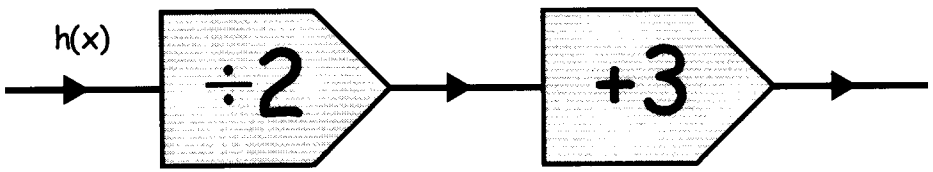


$g(2) = 2 \times 2 - 1 = 3$

$g(5) =$

$g(10) =$

$h(x) = \frac{x}{2} + 3$

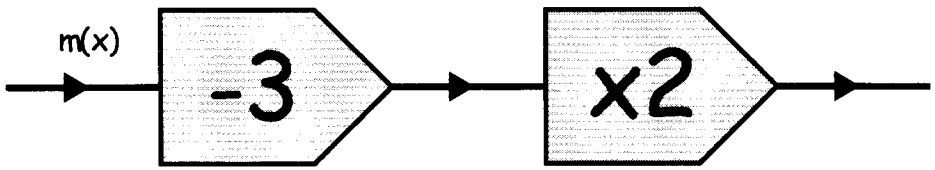


$h(2) = \frac{2}{2} + 3 = 4$

$h(5) =$

$h(10) =$

$m(x) = 2(x - 3)$



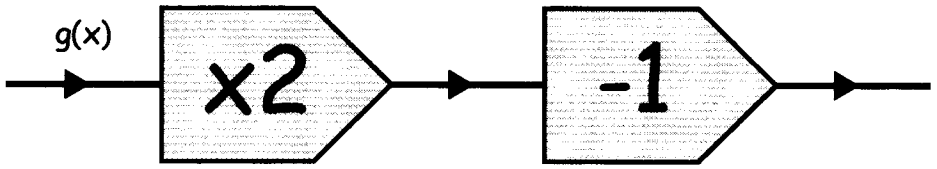
$m(2) = 2(2 - 3) = -2$

$m(5) =$

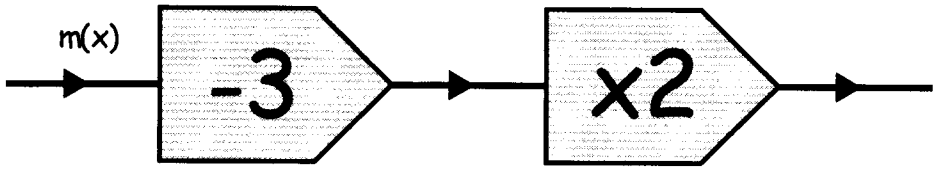
$m(10) =$

Composite Functions

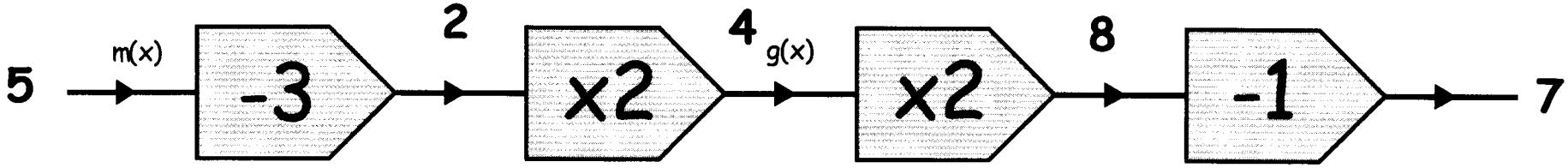
$g(x) = 2x - 1$



$m(x) = 2(x - 3)$

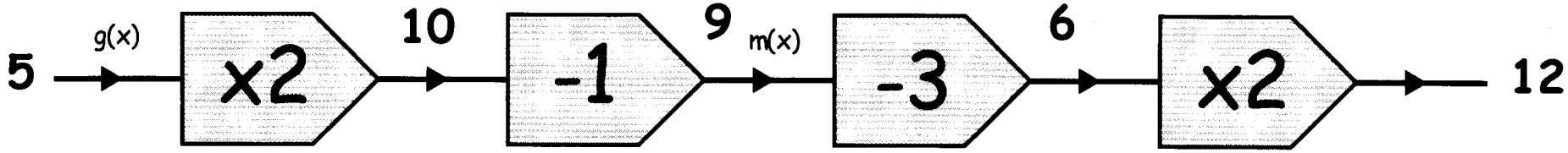


gm(x) put x into m, put the output of m into g gm(5) = 7



Find 1) gm(10) = 2) gm(7) = 3) gm(4) =

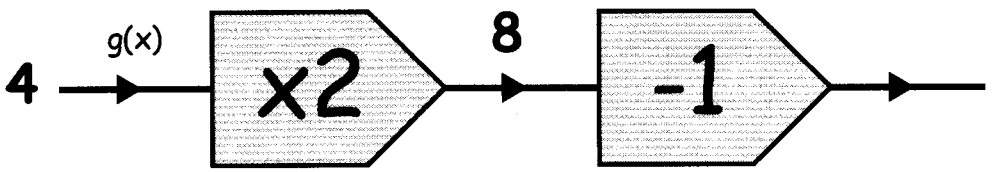
mg(x) put x into g, put the output of g into m. mg(5) = 12



Find 4) mg(10) = 5) mg(7) = 6) mg(4) =

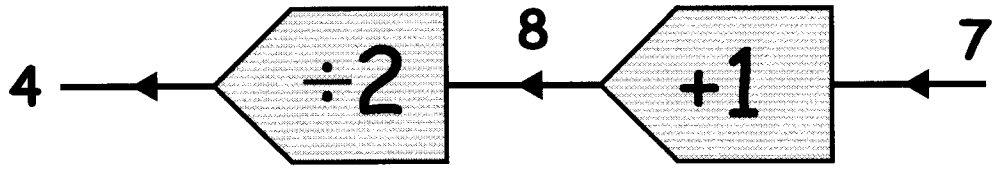
The inverse function reverses the original function

$g(4) = 7$



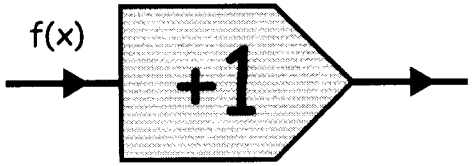
$g(x) = 2x - 1$

$g^{-1}(7) = 4$



$g^{-1}(x) = \frac{x + 1}{2}$

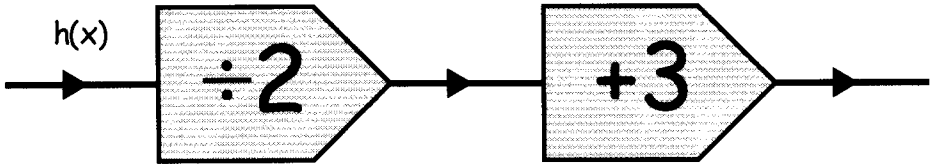
$f(x) = x + 1$



$f^{-1}(x) =$

$f^{-1}(13) =$

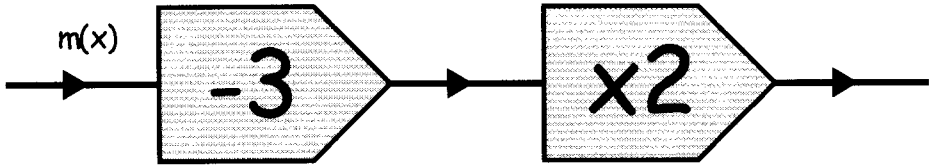
$h(x) = \frac{x}{2} + 3$



$h^{-1}(x) =$

$h^{-1}(8) =$

$m(x) = 2(x - 3)$



$m^{-1}(x) =$

$m^{-1}(12) =$

FUNCTIONS

1) $f(x) = x + 1$

a) $f(2) =$ b) $f(6) =$ c) $f(?) = 12$ d) $f(-3) =$

2) $g(x) = 2x - 1$

a) $g(3) =$ b) $g(5) =$ c) $g(-1) =$ d) $g(?) = 13$

3) $h(x) = \frac{x}{2} + 3$

a) $h(4) =$ b) $h(10) =$ c) $h(7) =$ d) $h(?) = 11$

4) $m(x) = 2(x - 3)$

a) $m(1) =$ b) $m(3) =$ c) $m(-2) =$ d) $m(?) = 10$

COMPOSITE FUNCTIONS – REMEMBER WORK FROM INSIDE OUTWARDS OR RIGHT TO LEFT

$f(x) = x + 1$ $g(x) = 2x - 1$ $h(x) = \frac{x}{2} + 3$ $m(x) = 2(x - 3)$

5) $fg(2) =$ Hint: Put 2 into g(x) then put the output into f(x)

6) $gf(2) =$ Hint: Put 2 into f(x) then put the output into g(x)

7) $mh(4) =$ Hint: Put 4 into h(x) then put the output into m(x)

8) $hm(4) =$ Hint: Put 4 into m(x) then put the output intoh(x)

9) $gh(6) =$ Hint: Put 6 into h(x) then put the output into g(x)

10) $fm(2) =$ Hint: Put 2 into m(x) then put the output into f(x)

11) $fh(6) =$ 12) $hg(5) =$ 13) $gm(10) =$ 14) $mf(9)$

15) $mgf(4)$ 16) $ff(3)$ 17) $mm(4)$ 18) $hh(2)$

Functions

1) $f(x) = 5x + 1$ and $g(x) = 2(x-1)$. Find

a) $f(3)$ b) $g(4)$ c) $fg(3)$

d) $gf(1)$ e) $gg(3)$ f) $ff(2)$

g) $fg(x)$ h) $gf(x)$ i) $f^{-1}(x)$

j) $g^{-1}(x)$ k) $f^{-1}(21)$ l) $g^{-1}(16)$

2) $m(x) = 3x - 2$ and $n(x) = 4(x+1)$. Find

a) $m(3)$ b) $n(4)$ c) $mn(3)$

d) $nm(1)$ e) $nn(3)$ f) $mm(2)$

g) $mn(x)$ h) $nm(x)$ i) $m^{-1}(x)$

j) $n^{-1}(x)$ k) $m^{-1}(22)$ l) $n^{-1}(16)$