8. $g(a) = a^3 - a$

$f(a) = \boxed{4a - 1}$

$(g \circ f)(a) = g(f(a)) = (4a-1)^3 - (4a-1)$

$= (64a^3 - 48a^2 + 12a - 1) - 4a + 1$

$= \boxed{64a^3 - 48a^2 + 8a}$

Aug 2-7:48 AM

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

$= (16a^2 - 8a + 1)(4a - 1)$

$= 64a^3 - 48a^2 + 12a - 1$

×	$4a$	-1
$4a$	$16a^2$	$-4a$
-1	$-4a$	$+1$

$16a^2 - 8a + 1$

×	$16a^2$	$-8a$	$+1$
$4a$	$64a^3$	$-32a^2$	$4a$
-1	$-16a^2$	$8a$	-1

$64a^3 - 48a^2 + 12a - 1$

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9.) $g(x) = 4x + 4$

$f(x) = -x + 4$

$g(f(x)) = 4(-x+4) + 4$

$= -4x + 16 + 4$

$= \boxed{-4x + 20}$

Aug 2-7:58 AM

16.) $h(x) = 2x - 4$

$g(x) = -3x^2 + 2$ $g(-2) = -3(-2)^2 + 2 = \boxed{-10}$

$(h \circ g)(-2) = h(g(-2)) = h(-10) = 2(-10) - 4$

$= -20 - 4$

$= \boxed{-24}$

Aug 2-8:00 AM

15. $g(t) = 2t^2 + 2$
$f(t) = 3t + 2$

$g(-2) \cdot f(-2)$

$\left(2(-2)^2 + 2\right) \cdot \left(3(-2) + 2\right)$

$10 \cdot -4$

$\boxed{-40}$

Aug 2-9:52 AM

1.4 Inverse Functions

Find an inverse

① Switch the x + y

② Solve for y

③ Done.

$f(x) = x + 2$

$f^{-1}(x) = \underline{\hspace{2cm}}$

"f inverse of x"

Aug 2-8:05 AM

Ex1 Find the inverse $f^{-1}(x)$.

a.) $f(x) = x + 2$

$y = x + 2$ rewrite with y

$x = y + 2$ switch x + y

$x - 2 = y$ solve for y

$$f^{-1}(x) = x - 2$$

Aug 2-8:08 AM

b.) $f(x) = \sqrt[3]{x - 5}$

$y = \sqrt[3]{x - 5}$
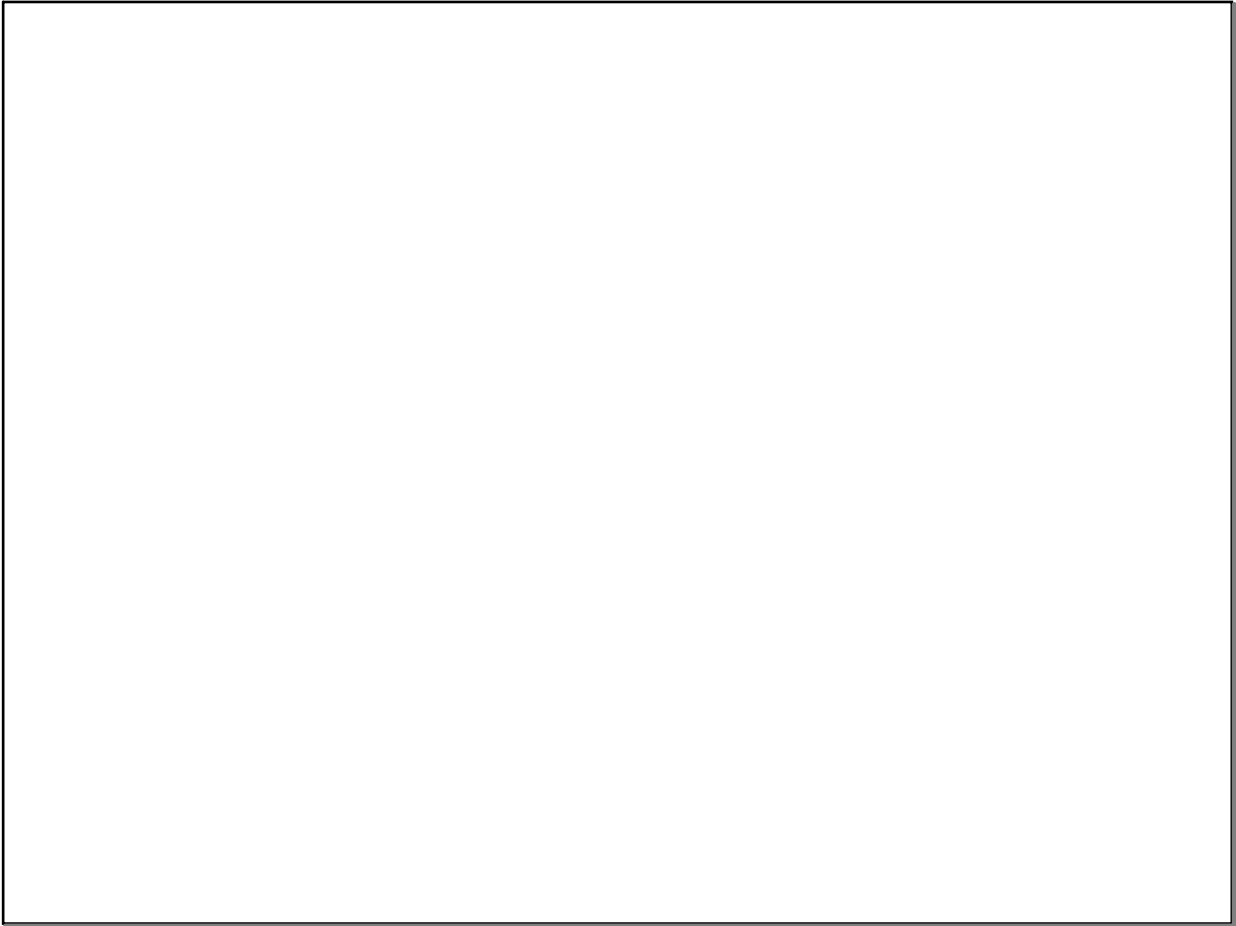
$x = \sqrt[3]{y - 5}$ * undo a $\sqrt[3]{\ }$ by "cubing" both sides

$x^3 = y - 5$

$x^3 + 5 = y$ $$f^{-1}(x) = x^3 + 5$$

Aug 2-8:10 AM

4

Aug 2-10:00 AM