

Ex. 3 Composition of functionsLet $f(x) = x - 2$ and $g(x) = x^2$. Find $f(g(5))$.

$$f(g(5)) = f(25) = 25 - 2 = \textcircled{23}$$

$$g(5) = 5^2 = 25$$

$$g(5) = 25$$

$$f(g(2)) = f(2^2) = f(4) = 4 - 2 = \textcircled{2}$$

Ex. 3a Composition of functionsLet $f(x) = x - 2$ and $g(x) = x^2$. Find $f(g(-5))$.

$$\begin{aligned} f(g(-5)) &= f(-5^2) \\ &= f(25) \\ &= 25 - 2 \\ &= \textcircled{23} \end{aligned}$$

$$g(f(-5))$$

Feb 19-11:43 AM

Ex. 4 Composition of functionsLet $f(x) = x - 6$ and $g(x) = 2x^2 + 3x - 1$. Find $f(g(x))$.

$$\begin{aligned} f(2x^2 + 3x - 1) &= (2x^2 + 3x - 1) - 6 \\ &= 2x^2 + 3x - 7 \end{aligned}$$

$$D: \mathbb{R}$$

$$g(f(x)) = g(x - 6) = 2(x - 6)^2 + 3(x - 6) - 1$$

$$g(f(3)) = g(-3) = 2(-3)^2 + 3(-3) - 1 = \textcircled{8}$$

Feb 22-7:18 PM

7.6 Domains

$f(x) = x^2 + 5x + 6$ $g(x) = x + 3$

① $f(x) + g(x)$

② $\frac{f(x)}{g(x)}$

③ $g(x) - f(x)$

④ $g(f(x))$

5. $f(g(1)) = f(4)$

$= 4^2 + 5(4) + 6$

$= 16 + 20 + 6$

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$\frac{x^2 + 5x + 6}{x + 3} = \frac{(x+2)(x+3)}{x+3}$

$x+3 - x^2 - 5x - 6$
 $-x^2 - 4x - 3$

$x+2$ D: $\mathbb{R}, x \neq -3$

$g(x^2 + 5x + 6)$
 $= x^2 + 5x + 6 + 3$
 $= x^2 + 5x + 9$
D: \mathbb{R}

Feb 8-1:13 PM