

The following functions are composite functions

$Y=f(g(x))$, where $f(x)$ is the outside function and $g(x)$ is the inside function.

Identify $f(x)$ and $g(x)$ for the following functions.

Or $f(x)$, $g(x)$, $h(x)$ if $y=f(g(h(x)))$.

1) $y = (x^3 + 2x)^{37}$

2) $y = \left(x^3 - \frac{7}{x}\right)^{-2}$

3) $y = \frac{4}{(3x^2 - 2x + 1)^3}$

4) $y = \sqrt{4 + 3\sqrt{x}}$

5) $y = (x^2 + 2x)^4 (\sin(x))^2$

6) $f(x) = \sin^5(3x^4)$

7) $f(x) = 4\cos^5 x$

8) $f(x) = \sin\left(\frac{1}{x^2}\right)$

9) $k(x) = \sqrt{\tan(x)}$

10) $y = \frac{(3x + 2)^2}{(2x^3 + x)^4}$

11) $f(x) = \csc^4(x^2)$

12) $g(x) = (\csc(x))^{-3}$

13) $y = e^{2x}$

14) $y = (e)^{\sin x}$