

Essential Skills 27

The skills in this series of worksheets appear frequently.

These are the GIFTS you must take to succeed



Composite Functions

Find $f(g(x))$ and $g(f(x))$ for each of the following:

1. $f(x) = 8x + 3, g(x) = 1 - 2x$
2. $f(x) = x^2, g(x) = 1 + x$
3. $f(x) = 6x + 1, g(x) = 2x$
4. $f(x) = x^2 - 1, g(x) = 2x - 3$
5. $f(x) = x + 5, g(x) = \frac{1}{x}$
6. $f(x) = x + 1, g(x) = x^2 + x - 1$
7. $f(x) = \sqrt{x - 1}, g(x) = x^2 + 1$
8. $f(x) = 2x + 1, g(x) = \frac{1}{x - 3}$
9. $f(x) = \sin x, g(x) = 6x + 1$
10. $f(x) = \cos x, g(x) = 2x^2 - 1$

APPLYING QUESTIONS

1. Given that $f(x) = \frac{1}{x^2 - 1}, \{x \neq \pm 1\}$ and $g(x) = x - 3$
Find a formula for $h(x) = f(g(x))$, and state a suitable domain for $h(x)$.
2. Given that $f(x) = \frac{1}{1+x}, \{x \neq -1\}$, find $f(f(x))$.

