

## 1-3 Videos Guide

### 1-3a

Exercises:

- For the given functions  $f$  and  $g$ , find  $(f \circ g)(x)$  and  $(g \circ f)(x)$  and their domains.
  - $f(x) = 2x - 3$ ,  $g(x) = \sqrt{x}$
  - $f(x) = \frac{1}{x+2}$ ,  $g(x) = \frac{x-1}{x+3}$

### 1-3b

Exercises:

- Express the function in the form  $f \circ g$ .
$$G(x) = \sqrt[3]{\frac{x}{1+x}}$$
- An airplane is flying at a speed of 350 mi/h at an altitude of one mile and passes directly over a radar station at time  $t = 0$ .
  - (a) Express the horizontal distance  $d$  (in miles) that the plane has flown as a function of  $t$ .
  - (b) Express the distance  $s$  between the plane and the radar station as a function of  $d$ .
  - (c) Use composition to express  $s$  as a function of  $t$ .