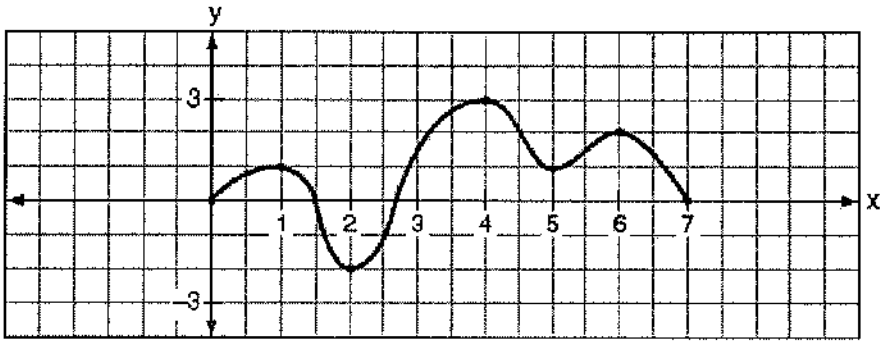
Fun with Composite Functions Name:

a) If f(x) = –2x + 7 and $g(x) = x^2 - 2$, then f(g(3)) is equal to

(1) –7
(2) –3
(3) –1
(4) 7

b) A certain drug raises a patient's heart rate, h(x), in beats per minute, according to the function $h(x) = 70 + 0.2x$, where x is the bloodstream drug level, in milligrams. The level of the drug in the patient's bloodstream is a function of time, t, in hours, according to the formula $g(t) = 300(0.8)^t$. Find the value of $h(g(4))$, the patient's heart rate in beats per minute, to the *nearest whole number*.

c) The accompanying graph is a sketch of the function y = f(x) over the interval $0 \le x \le 7$. What is the value of $(f \circ f)(6)$?



More Practice with Composition of Functions **Name:**

Try the compositions below given the following functions. Simplify fully.

$f(x) = x^2 + 3$ $g(m) = \frac{10}{m}$ $h(r) = \sqrt{4 + r}$ $j(x) = \frac{4}{2x - 1}$

1) $(f \circ h)(5)$

2) $(j \circ g)(10)$

3) $h(j(0))$

4) $g(f(3))$

5) $(h \circ g)(2)$

6) $f(j(1))$

7) $f(f(1))$

8) $(f \circ g)(20)$