

Use the table below to evaluate each expression. State “DNE” if any do not exist.

$x$	<b>-4</b>	<b>-1</b>	<b>3</b>	<b>5</b>	<b>10</b>
$f(x)$	-2	7	5	10	-1
$g(x)$	3	5	-2	1	4
$h(x)$	5	6	-1	-4	-2

- |  |                             |                            |
|--|-----------------------------|----------------------------|
| <b>1)</b> $f(3)$                         | <b>7)</b> $(h \circ h)(-1)$ | <b>13)</b> $f(f^{-1}(10))$ |
| <b>2)</b> $(f + h)(10)$                  | <b>8)</b> $g(h(f(3)))$      | <b>14)</b> $h^{-1}(h(3))$  |
| <b>3)</b> $(fg)(3)$                      | <b>9)</b> $f(-1) + 5$       | <b>15)</b> $f^{-1}(10)$    |
| <b>4)</b> $\left(\frac{h}{f}\right)(-4)$ | <b>10)</b> $-g(-4) - 7$     | <b>16)</b> $h^{-1}(-1)$    |
| <b>5)</b> $(g \circ f)(5)$               | <b>11)</b> $f^{-1}(5)$      |                            |
| <b>6)</b> $(f \circ h)(10)$              | <b>12)</b> $h^{-1}(-4)$     |                            |

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The volume in cubic centimeters, of a spherical balloon of radius  $r$  is given by  $V(r) = \frac{4}{3}\pi r^3$

As someone blows air into the balloon, the radius of the balloon as a function of time (seconds) is given by the function  $r(t) = 2t$ .

**9)** Find and interpret  $V(3)$

**10)** Find and interpret  $r(3)$

**11)** Find and interpret  $V(r(3))$

**12)** Create and interpret the function  $V(r(t))$