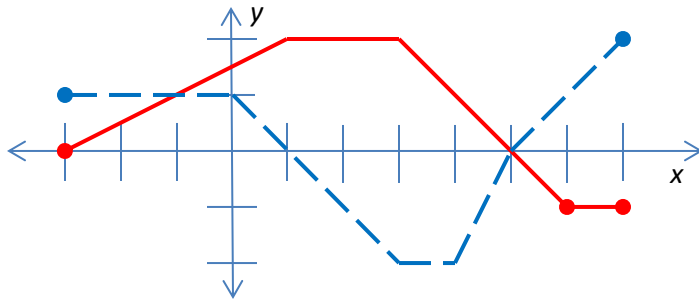
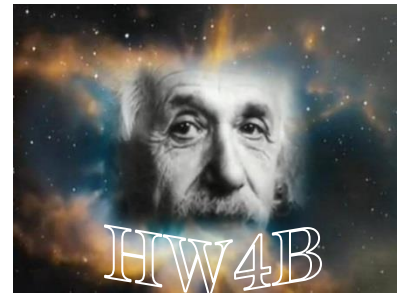


Use the graph shown below to answer questions 1 – 7.



$f(x) =$	
$g(x) =$	



- | | | |
|--|--|--|
| 1) Find $f(3) - g(1)$ | 2) Find $g(-3) + f(7)$ | 3) For what values of x is $f(x) - g(x)$ positive? |
| 4) For what values of x is $f(x) - g(x)$ negative? | 5) For what values of x is $f(x) - g(x)$ zero? | |
| 6) What is the maximum value for $f(x) - g(x)$? | 7) What is the minimum value for $f(x) - g(x)$? | |

Use the functions listed in the text box to the right to find the following.

- | | | |
|----------------------|-----------------------------------|-------------------|
| 8) $(f + g)(x)$ | 9) $(g - h)(x)$ | |
| 10) $(g \cdot h)(x)$ | 11) $\left(\frac{h}{f}\right)(x)$ | |
| 12) $f(g(3))$ | 13) $(f \circ g)(x)$ | 14) $g(f(-6))$ |
| 15) $(g \circ f)(x)$ | 16) $f(g(h(-2)))$ | 17) $g(h(f(-9)))$ |

$f(x) = x + 8$
$g(x) = 3x^2 - 7$
$h(x) = x^3 + 2x + 3$

- | | | |
|--|----------------------------|---------------------------------------|
| 1) 2 | 5) $x = -1, 5$ | 10) $3x^5 - x^3 + 9x^2 - 14x - 21$ |
| 2) 0 | 6) 4 | 11) $x^2 - 8x + 66 - \frac{525}{x+8}$ |
| 3) $-1 < x < 5$ | 7) -3 | 14) 5 |
| 4) $-3 \leq x < -1$
or $5 < x \leq 7$ | 8) $3x^2 + x + 1$ | 15) $3x^2 + 48x + 185$ |
| | 9) $-x^3 + 3x^2 - 2x - 10$ | 16) 236 |
| | | 17) -7 |
| | | 12) 28 |
| | | 13) $3x^2 + 1$ |