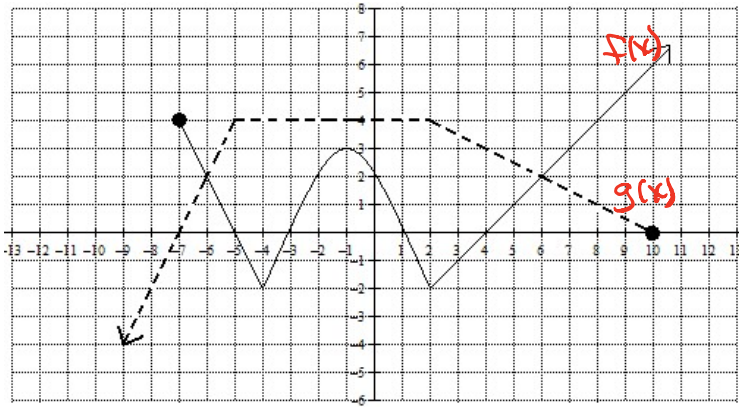


**Homework 1.3**



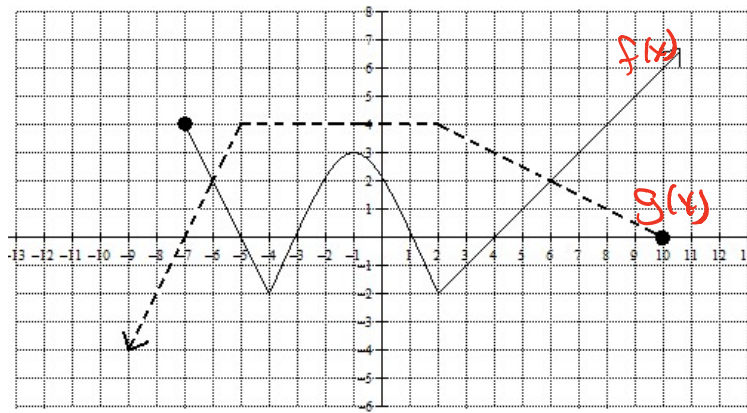
$f(x)$  is the solid line graph and  $g(x)$  is the dashed line graph.

Find each of the following indicated quantities.

1. $f(2) = -2$	2. $f(-1) = 3$	3. $f(3) = -1$	4. $g(-8) = -2$	5. $g(0) = 4$	6. $g(-4.13) = 4$
7. $g(7) - 2 \cdot f(-7) = 1.5 - 2(4)$ $= 1.5 - 8$ $= -6.5$		8. $(f + g)(-4) = f(-4) + g(-4)$ $= -2 + 4$ $= 2$		9. $(f - g)(-3) = f(-3) - g(-3)$ $= 0 - 4$ $= -4$	
10. $(g - f)(9) = g(9) - f(9)$ $= 0.5 - 5$ $= -4.5$		11. $(f - g)(2) = f(2) - g(2)$ $= -2 - 4$ $= -6$		12. Values of $x$ where $f(x) = 0$ . $x = -5, -3, 1, 4$	
13. $4 \cdot g(-12) + 3 \cdot f(13)$ $= 4 \cdot (-10) + 3(9)$ $= -40 + 27$ $= -13$		14. $-3[f(7) - 2 \cdot g(1.7)]$ $= -3[3 - 2 \cdot 4]$ $= -3[3 - 8]$ $= -3[-5]$ $= 15$		15. $\frac{g(-8) + f(0)}{g(0)} = \frac{-2 + 2}{4}$ $= \frac{0}{4}$ $= 0$	
16. The value(s) of $x$ such that $f(x) = -2$ $x = -4, 2$		17. The value(s) of $x$ such that $f(x) = 2$ $x = -4, -2, 0, 6$		18. The value(s) of $x$ such that $g(x) = -6$ $x = -10$	
19. The value(s) of $x$ such that $f(x) = 11$ $x = 15$		20. The value(s) of $x$ such that $h(x) = g(4)$ if $h(x) = \frac{1}{2} x + 3 $ $\frac{1}{2} x + 3  = 3 \cdot 2$ $ x + 3  = 6$ $x + 3 = \pm 6$ $x = -3 \pm 6$ $x = -9, 3$			

$f(x)$  is the solid line graph below.

$g(x)$  is the dashed line graph below.



Find each of the following indicated quantities.

<p>21. The value(s) of <math>x</math> such that <math>q(x) = 3 \cdot g(-8)</math> if <math>q(x) = 5 - 2x</math></p> $5 - 2x = 3(-2)$ $5 - 2x = -6$ $-2x = -11$ $x = \frac{11}{2}$	<p>22. The value(s) of <math>x</math> such that <math>P(x) = 7 - f(3)</math> if <math>P(x) = x^2 - 7x</math></p> $x^2 - 7x = 7 - (-1)$ $x^2 - 7x = 8$ $x^2 - 7x - 8 = 0$ $(x - 8)(x + 1) = 0$ $x - 8 = 0 \quad   \quad x + 1 = 0$ $x = 8 \quad   \quad x = -1$	
<p>23. Intervals of <math>x</math> where <math>F(x)</math> is increasing</p> $(-4, -1) \cup (2, \infty)$	<p>24. Intervals of <math>x</math> where <math>F(x)</math> is decreasing</p> $(-7, -4) \cup (-1, 2)$	<p>25. Intervals of <math>x</math> where <math>F(x)</math> is constant</p> <p>No intervals</p>
<p>26. Intervals of <math>x</math> where <math>G(x)</math> is increasing</p> $(-\infty, -5)$	<p>27. Intervals of <math>x</math> where <math>g(x)</math> is decreasing</p> $(2, 10)$	<p>28. Intervals of <math>x</math> where <math>G(x)</math> is constant</p> $(-5, 2)$