

MAT 150 – Homework 3
Sections 1.1 and 1.2

NAME _____

Directions: Show all work and write your final answer in the space provided.

1. If $f(x) = \frac{3x+2}{x^2-4}$, find the domain of $f(x)$. 1. _____
2. If $f(x) = 4x - 7$ and $g(x) = 2x^2 - 5x + 3$, find $(f - g)(x)$. 2. _____
3. If $g(x) = \sqrt{7-4x}$, find the domain of $g(x)$. 3. _____
4. If $f(x) = 2x - 3$, find the difference quotient, that is, find $\frac{f(x+h)-f(x)}{h}, h \neq 0$. 4. _____
5. If $f(x) = \frac{3}{x-2}$ and $g(x) = \frac{4}{x+1}$, find $(f + g)(x)$. 5. _____
6. If $g(x) = -3x^2 + 5x$, find the x-intercept(s). 6. _____
7. If $f(x) = \frac{2x+1}{x-4}$, find $f(x-3)$. 7. _____
8. If $f(x) = 2x - 7$ and $g(x) = 3x + 8$, find $(fg)(x)$. 8. _____
9. If $f(x) = \frac{5}{\sqrt{x+8}}$, find the domain of $f(x)$. 9. _____
10. If $f(x) = x^2 - 5$, find the difference quotient. 10. _____
11. If $f(x) = \frac{2x+5}{3x-2}$, find the y-intercept. 11. _____
12. If $f(x) = 2x^2 - 3x + 1$ and $g(x) = -3x^2 - 5$, find $(fg)(-4)$. 12. _____

13. If $g(x) = 4x^2 - 5x + 7$, find $g(2x + 9)$.

13. _____

14. If $g(x) = \frac{x-5}{x^2+9}$, what is the domain of $g(x)$?

14. _____

15. If $f(x) = -3x^2 + 5x$ and $f(x) = -2$, what is the value of x ?

15. _____

16. If $f(x) = -3x^2 + 4x - 1$, find the difference quotient.

16. _____

17. If $h(x) = \frac{2x-B}{3x+4}$ and $h(2) = \frac{1}{2}$, what is the value of B ?

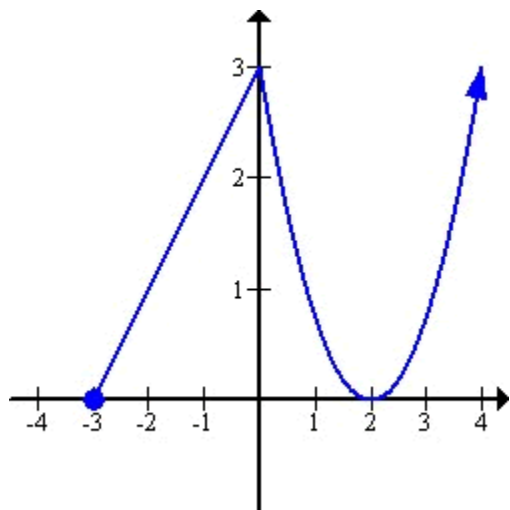
17. _____

18. Determine if the graph below is a function and state the domain and range.

Function: _____

Domain: _____

Range: _____



19. If $f(x) = \sqrt{x^2 + 2x}$, find $f(x + h)$.

19. _____

20. If $f(x) = \frac{1}{x}$, find the difference quotient.

20. _____