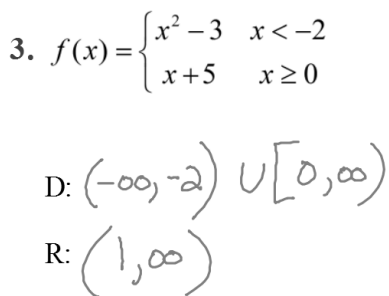
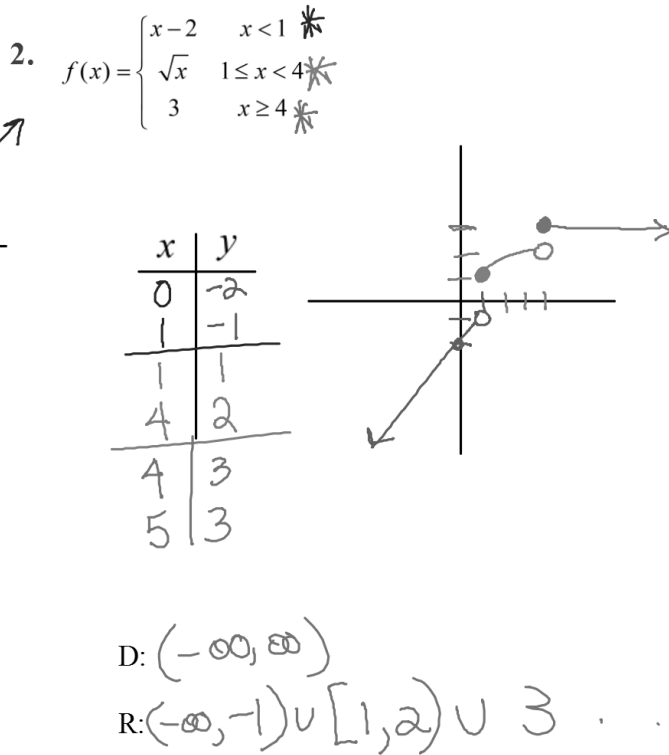
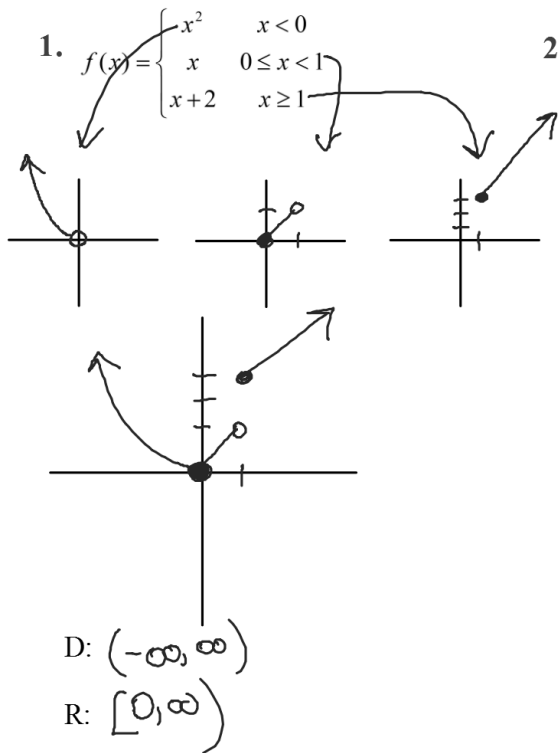
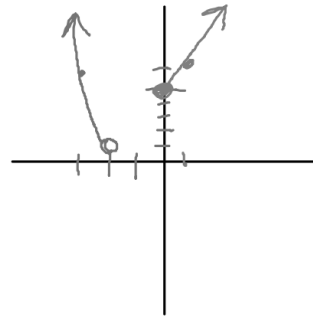


Piecewise Functions & Composition Section 1.2

Graph each function, then determine the domain and range.



x	y
-3	6
-2	1
0	5
1	



Composition of Functions

$$f(x) = 2x - 3$$

$$g(x) = \sqrt{x}$$

Find each of the following:

5. $f(g(x))$ or $f \circ g(x) = 2(\sqrt{x}) - 3$
 $= 2\sqrt{x} - 3$

6. $g(f(x)) = \sqrt{2x-3}$

7. $f(f(x)) = 2(2x-3) - 3$
 $4x - 6 - 3$
 $4x - 9$

8. $f(g(2)) = 2(\sqrt{2}) - 3$
 $= 2\sqrt{2} - 3$

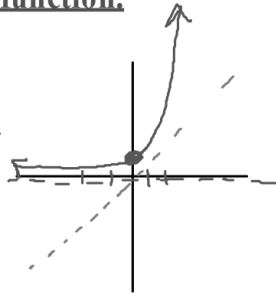
Exponential and Logarithmic Functions Section 1.3

Graph each function.

1. $y = 5^x$

x	y
2	25 = 5 ²
1	5 = 5 ¹
0	1
-1	1/5
-2	1/25

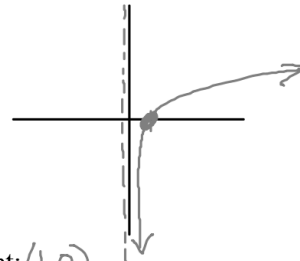
y-int: (0, 1)
D: (-∞, ∞)
R: (0, ∞)
Asymptote: $y = 0$



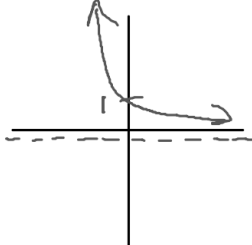
2. $y = \log x$

x	y
1	0

x-int: (1, 0)
D: (0, ∞)
R: (-∞, ∞)
Asymptote: $x = 0$

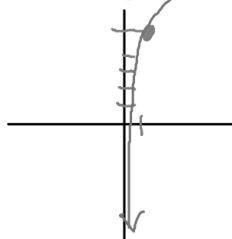


3. $y = 5^{-x}$



y-int: (0, 1)
D: (-∞, ∞)
R: (0, ∞)
Asymptote: $y = 0$

4. $y = \log x + 5$



x-int: (10⁻⁵, 0)
D: (0, ∞)
R: ℝ
Asymptote: $x = 0$

$$y = \log x + 5$$

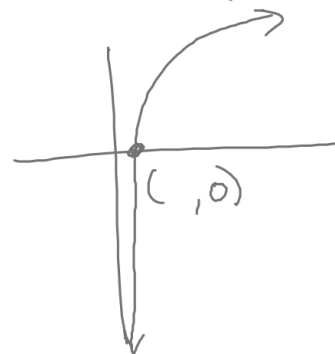
$$0 = \log x + 5$$

$$-5 = \log x$$

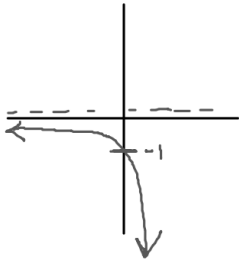
$$\log_{10} x = -5$$

$$10^{-5} = x$$

x-int (10⁻⁵, 0)

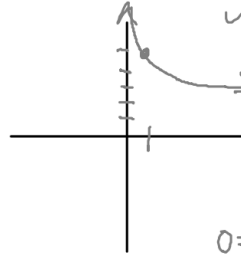


5. $y = -5^x$



y-int: $(0, -1)$
 D: $(-\infty, \infty) \in \mathbb{R}$
 R: $(-\infty, 0)$
 Asymptote: $y=0$

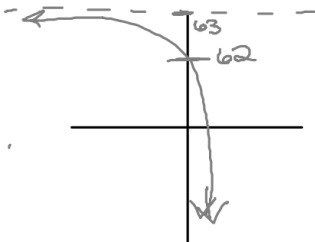
6. $y = 5 - \log x$



y-int: $(10^5, 0)$
 D: $(0, \infty)$
 R: $(-\infty, \infty)$
 Asymptote: $x=0$

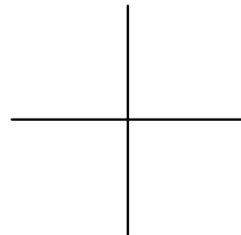
$0 = 5 - \log x$
 $\log x = 5$
 $10^5 = x$

7. $y = 63 - 5^x$



y-int: $(0, 62)$
 D: $(-\infty, \infty)$
 R: $(-\infty, 63)$
 Asymptote: $y=63$

8. $y =$



y-int:
 D:
 R:
 Asymptote: