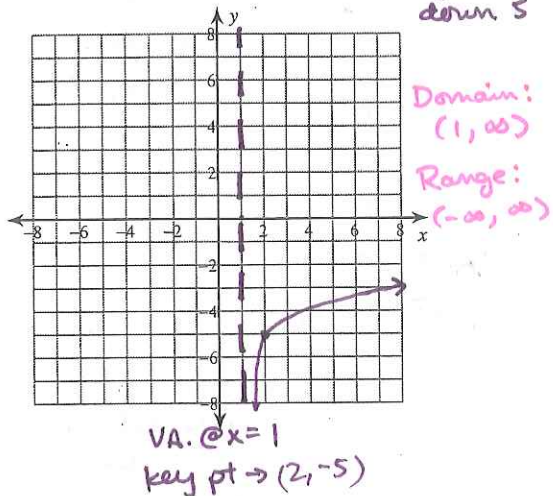


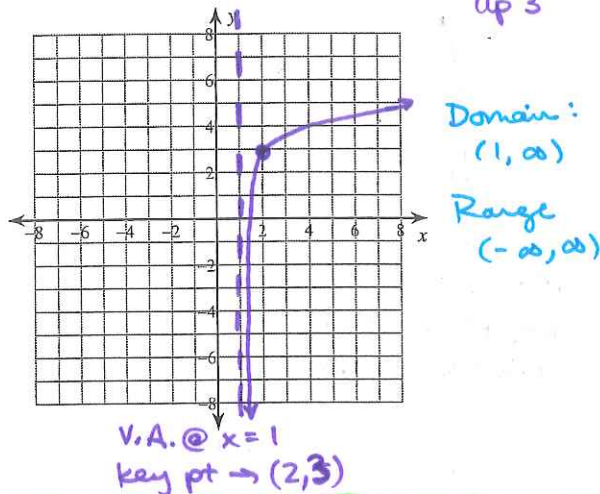
Graphing Logarithms

Identify the domain and range of each. Then sketch the graph.

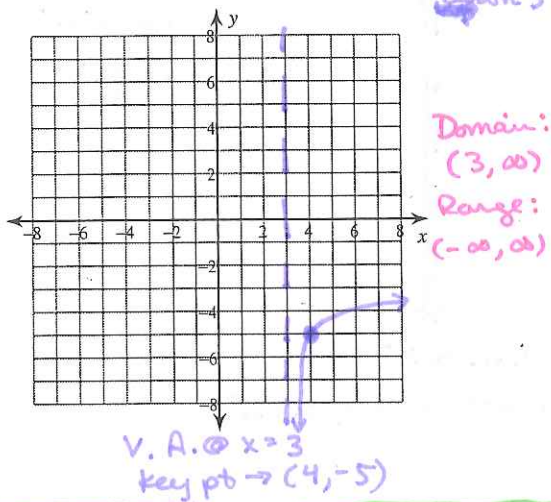
1) $y = \log_6(x-1) - 5$ shift right 1, down 5



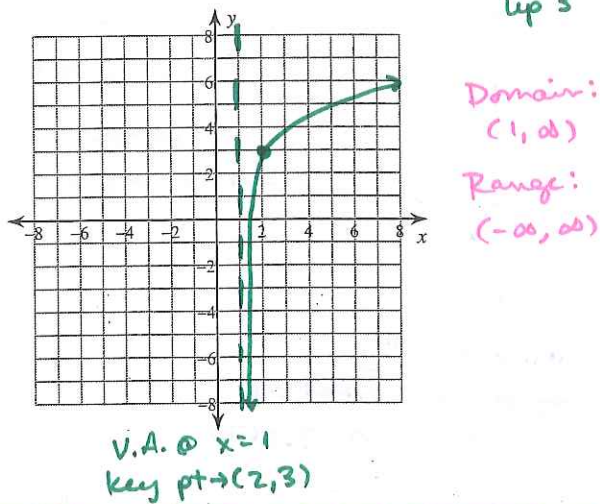
2) $y = \log_5(x-1) + 3$ shift right 1, up 3



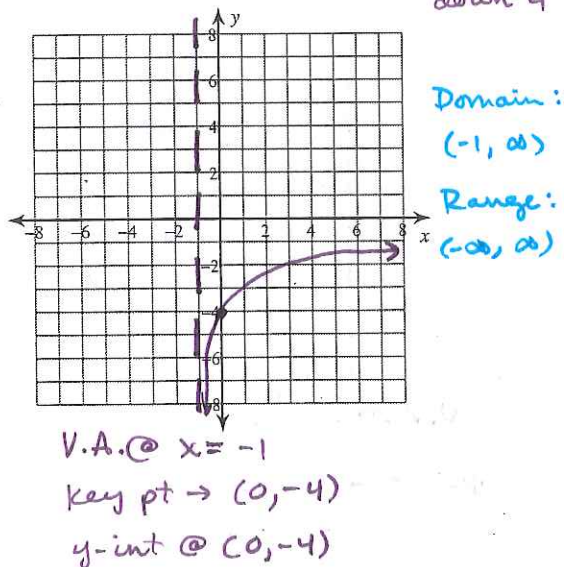
3) $y = \log_6(x-3) - 5$ shift right 3, down 5



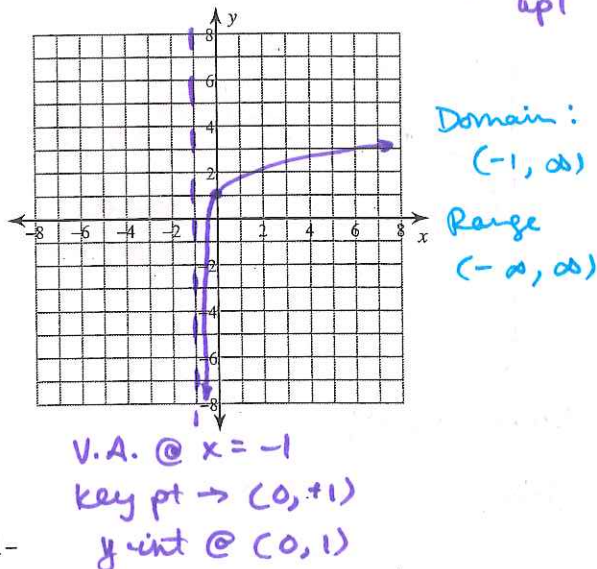
4) $y = \log_2(x-1) + 3$ shift right 1, up 3



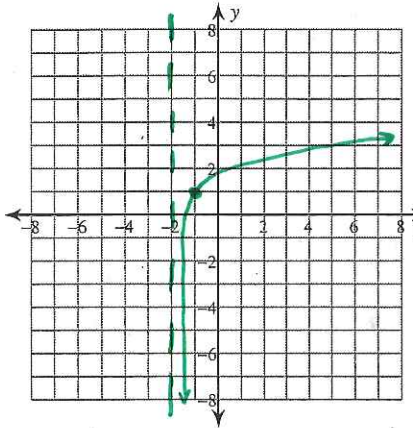
5) $y = \log_4(x+1) - 4$ shift left 1, down 4



6) $y = \log_5(x+1) + 1$ shift left 1, up 1



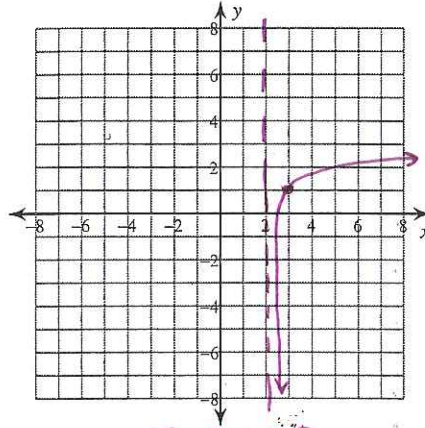
7) $y = \log_4(x+2) + 1$ shift left 2, up 1



Domain: $(-2, \infty)$
Range: $(-\infty, \infty)$

V.A. @ $x = -2$
key pt $\rightarrow (-1, 1)$
y-int @ $(0, 1.5)$

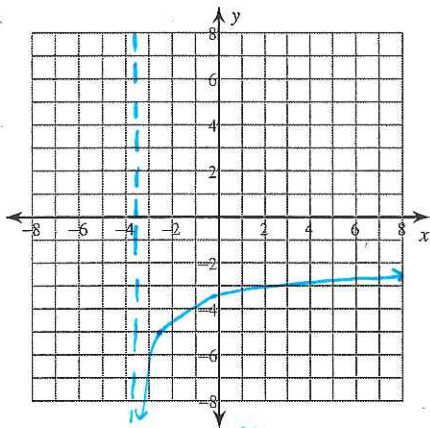
8) $y = \log_6(x-2) + 1$ shift right 2, up 1



Domain: $(2, \infty)$
Range: $(-\infty, \infty)$

V.A. @ $x = 2$
key pt $\rightarrow (3, 1)$

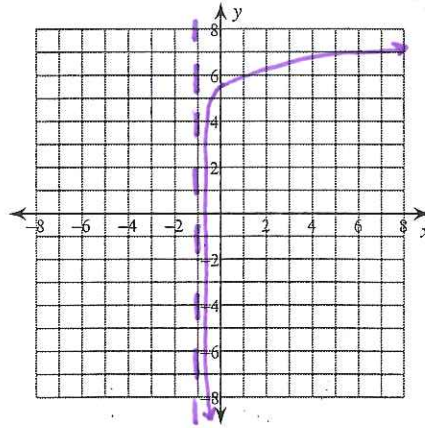
9) $y = \log_4(3x+11) - 5$ shift left $11/3$ down 5



Domain: $(-11/3, \infty)$
Range: $(-\infty, \infty)$

V.A. @ $x = -11/3$
~~key pt~~
y-int @ $(0, -3.267)$

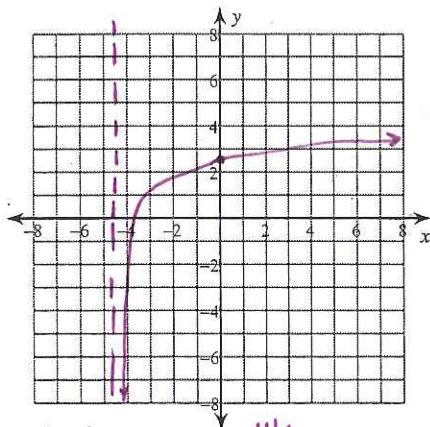
10) $y = \log_5(2x+2) + 5$ shift left 1, up 5



Domain: $(-1, \infty)$
Range: $(-\infty, \infty)$

V.A. @ $x = -1$
y-int @ $(0, 5.431)$

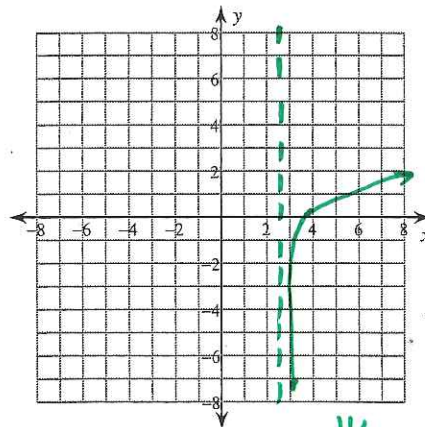
11) $y = \log_6(3x+14) + 1$ shift left $14/3$ up 1



Domain: $(-14/3, \infty)$
Range: $(-\infty, \infty)$

V.A. @ $x = -14/3$
y-int @ $(0, 2.473)$

12) $y = \log_2(4x-11) - 2$ shift right $11/4$ down 2



Domain: $(11/4, \infty)$
Range: $(-\infty, \infty)$

V.A. @ $x = 11/4$
~~y-int @~~