6.41 The voltage divider reduces the voltage swing across the 3 Ω resistor to 9Vsin(ωt). Diode D_1 clips this voltage (not v_s!) as it goes below -3V, and diode D_2 clips as it goes above +6V. (Sorry: no fancy graphics to show you what it looks like. Clipping at 6V just means that there is a horizontal straight line at 6V where the original sine wave would have gone higher than that. This is achieved by letting the forward biased diode sink enough current so that the voltage drop across the 1 kΩ resistor is just the difference between the 6V across the 3kΩ resistor and the momentary value of the sine wave [which at this point is $>$ 6V].)

6.43 If both diodes are off, the new voltage divider delivers 1/2 of v_s as v_o. If 5/6 of v_s now drops below -3V, D_1 will be on and the three volts will then be divided between the 2kΩ and the 3kΩ resistors: -9/5 V. If 1/2 of v_s goes above 6V, D_2 gets activated and clips v_o at 6V. Both diodes cannot be on at the same time.

6.47 We will always assume no load at output, so that all the current flows to ground through R.
a.) 0V means no currents, so 0V at output.
b.) Now D_2 is forward biased, and the 10V will be divided between R and R_f. The output voltage is 9V.
c.) Now both diodes are forward biased, and their currents will add to produce a voltage drop across R:
$\frac{10\mathrm{V}-\mathrm{v_o}}{1\mathrm{k}\Omega} + \frac{10\mathrm{V}-\mathrm{v_o}}{1\mathrm{k}\Omega} = \frac{v_o}{9\mathrm{k}\Omega}$
Therefore v_o is 180/19 V.

6.57 If one input is low, the corresponding diode is on and $v_3 = v_{in} + v_D = 2.7$V. Accounting for the forward voltage drop across D_3 we get that $v_o = 2$V, and the current through the 10kΩ is: 2V/10kΩ = 0.2mA. For this current to be supplied by the 10V supply line, the current through R_1 must be greater than 7.3V/R_1. From this we get: $R_1 < 36.5\mathrm{k}\Omega$.
If both inputs are high: $v_3 = v_{in} + v_D - 8.7$V, and $v_o = 8$V. The current through the 10kΩ resistor now is 0.8mA, and that entails a new upper limit for R_1: 1.3V/$R_1 >$ 0.8mA, leading to $R_1 < 1.63\mathrm{k}\Omega$. As it is the lower of the two upper limits, this last limit is the one to worry about.