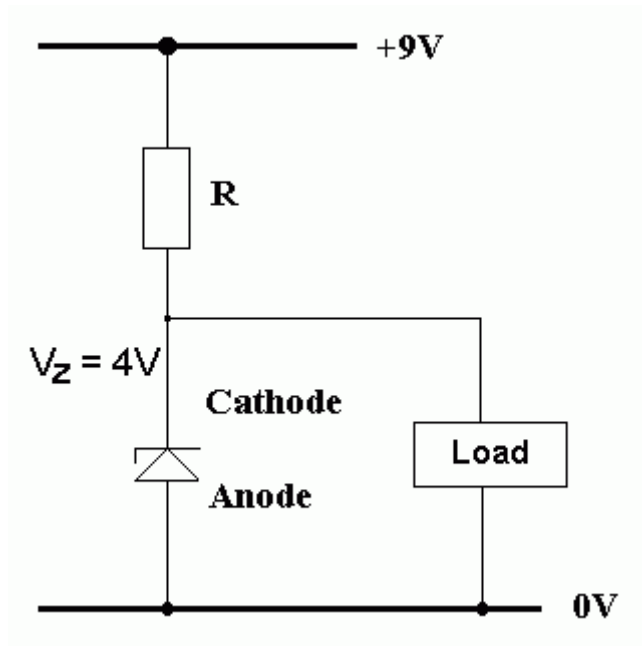


# 03 Zener Diode Test

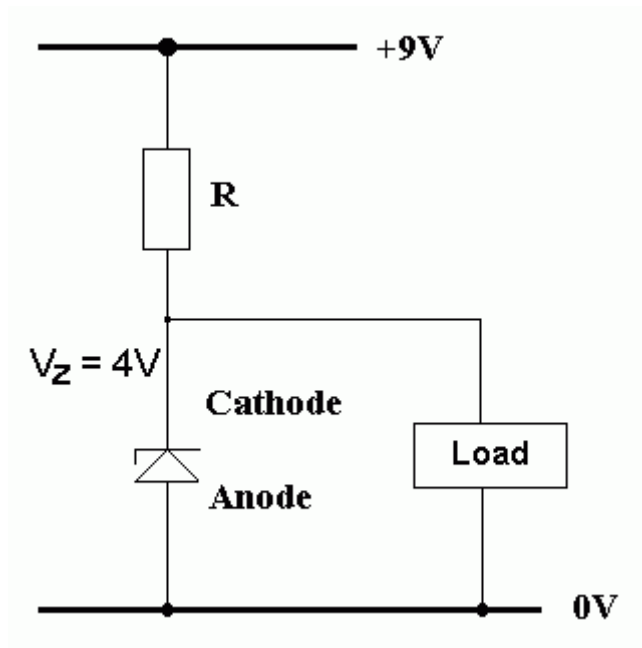
**Your Name:**

1. The diode that provides a stable reference voltage is called a \_\_\_\_\_ diode.
2. The minimum Zener diode current is 10mA.  
If the maximum load current is 90 mA, calculate the value for the series resistor.



3. From the E24 series of resistors would you select 47 or 51  $\Omega$ ? Explain your choice.
4. Sketch the resistor and label the colour stripes for the E24 resistor you selected. Assume the tolerance is 5%.
5. Calculate the power rating of the resistor in the diagram above.
6. Calculate the power rating of the Zener diode in the diagram above.

7. In this diagram the diode is \_\_\_\_\_ biased.



8. In the diagram above, if the load current decreases, what happens to the resistor current?

9. In the diagram above, if the load current decreases, what happens to the Zener diode current?

10. In the diagram above, if the maximum load current is increased to 190mA and the minimum Zener current is still 10mA, calculate the new resistor value.