

# Direct Reasoning

NAME \_\_\_\_\_

For questions 1-3, look at the picture and write two forms of the argument.

**Example:**



Premise: Everyone who drives at 80 MPH is breaking the law.

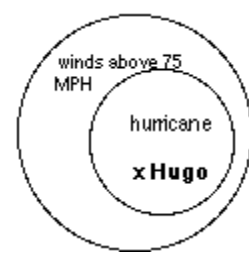
Premise: John is driving at 80 MPH.

Conclusion: John is breaking the law.

$p \rightarrow q$ : If you drive at 80 MPH, then you are breaking the law.

$p$ : John is driving at 80 MPH.

$q$ : John is breaking the law.



For questions 4–6, draw the proper conclusion and give the corresponding diagram.

4. If the density (in  $\text{g/cm}^3$ ) of a substance is less than 1, then the substance will float. The density of oak is between 0.6 and 0.9. We can thus conclude that \_\_\_\_\_.
5. Classical Doric architecture used symmetry for aesthetic reasons. the Basilica at Paestum in southern Italy is a Doric temple. We can thus conclude that \_\_\_\_\_.
6. If  $a$ ,  $b$ , and  $c$  are real numbers, then  $a(b + c) = ab + ac$ . These three numbers are real numbers: 2.1, -8, and 17. We can thus conclude that \_\_\_\_\_.
7. In *Hound of the Baskervilles*, Sherlock Holmes says to James Mortimer, “I observe from the yellow stain on the forefinger that you make your own cigarettes.” Write a valid argument that has Holmes’s deduction as a conclusion. Give an appropriate diagram.
9. Explain why the following argument is invalid. Draw the corresponding diagram.

Premise: All plastic toys are unbreakable.

Premise: This yellow truck is unbreakable.

Conclusion: This yellow truck is plastic.