

Math 150 Quiz 3 – Version A
September 23, 2013

Name: ANSWER KEY

Instructions: Use your own scrap paper. Write your answers in the spaces provided.

1. What is a *valid* (deductive) argument? An argument in which the conclusion is necessarily true if the premises are true.

2. What is a *sound* (deductive) argument? a valid argument with true premises

3. Negate the following statement: *No flowers are not ugly.*

Some flowers are not ugly (at least one isn't).

4. Determine whether the following arguments are valid or invalid. Give reasons by either drawing a Venn diagram or naming the type of argument used.

Argument

Valid/Invalid? Reason?

(a)

P1: If you live in the Bronx, you live in N.Y.

P2: John does not live in N.Y.

∴ John does not live in the Bronx

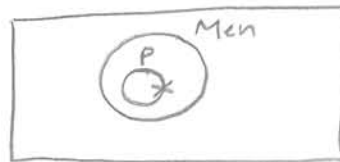
Valid. Denying the conclusion.

(b)

P1: All U.S. presidents have been men

P2: George Washington is a man

∴ George Washington was a U.S. president



P - presidents
X - George Washington

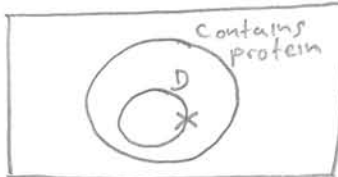
Invalid!

(c)

P1: All dairy products contain protein

P2: Soybeans contain protein

∴ Soybeans are dairy products



D - dairy products
X - soybeans

Invalid!

5. Given that $1 \text{ ft} = 12 \text{ in}$ and $\$1 = \pounds 0.62$, convert $\$5/\text{ft}^2$ to \pounds/in^2 .

$$\frac{\$5}{\text{ft}^2} = 0.02 \pounds/\text{in}^2$$

Bonus: How many centimeters are there in a kilometer? 100 000 or 10^5