Exercise 7.2

1. Some preachers are persons of unfailing vigor. No preachers are nonintellectuals. Therefore some intellectuals are persons of unfailing vigor.

Step 1: Break into premises and conclusion and symbolize
P1: Some preachers are persons of unfailing vigor.
P2: No preachers are nonintellectuals.
C: Some intellectuals are persons of unfailing vigor.

P1: Some P are V
P2: No P are nonI => All P are I (obverse)
C: Some I are V

Step 2: Translate into standard form
S = I
P = V
M = P

P1: Some M are P (major premise)
P2: All M are S (minor premise)
C: Some S are P

Step 3: Mood and figure: IAI – 3

Step 4: Diagram: <insert diagram here>

Step 5: Valid or invalid?
- valid (Disamis)

2. Some metals are rare and costly substances, but no welder's materials are nonmetals; hence some welder's materials are rare and costly substances.

Step 1: Break into premises and conclusion and symbolize
P1: Some metals are rare and costly substances.
P2: No welder's materials are nonmetals.
C: Some welder's materials are rare and costly substances.

P1: Some M are R
P2: No W are nonM => All W are M (obverse)
C: Some W are R

Step 2: Translate into standard form
S = W
P = R
M = M
P1: Some M are P (major premise)
P2: All S are M (minor premise)
C: Some S are P

Step 3: Mood and figure: IAI – 1

Step 4: Diagram <insert diagram here>

Step 5: Valid or Invalid?
- invalid (undistributed middle)

3. Some Asian nations were nonbelligerants, because all belligerents were allies of either Germany or Britain, and some Asian nations were not allies of either Germany or Britain.

Step 1: Break into premises and conclusion and symbolize

P1: All belligerents were allies of either Germany or Britain.
P2: Some Asian nations were not allies of either Germany or Britain.
C: Some Asian nations were nonbelligerants.

P1: All B were A
P2: Some N were not A
C: Some N were nonB => Some N were not B (obverse)

Step 2: Translate into standard form
S = N
P = B
M = A

P1: All P were M (major premise)
P2: Some S were not M (minor premise)
P3: Some S were not P

Step 3: Mood and figure: AOO - 2

Step 4: Diagram <insert diagram here>

Step 5: Valid or Invalid?
- valid (Baroko)

4. Some nondrinkers are athletes, because no drinkers are persons in perfect physical condition, and some people in perfect physical condition are not nonathletes.

Step 1: Break into premises and conclusion and symbolize
P1: No drinkers are persons in perfect physical condition.
P2: Some people in perfect physical condition are not nonathletes.
C: Some nondrinkers are athletes.

P1: No D are P
P2: Some P are not nonA => Some P are A (obverse)
C: Some nonD are A => Some A are nonD (converse) => Some A are not D (obverse)

Step 2: Translate into Standard Form
S = A
P = D
M = P

P1: No P are M (major premise)
P2: Some M are S (minor premise)
C: Some S are not P

Step 3: Mood and figure: EIO - 4

Step 4: Diagram <insert diagram here>

Step 5: Valid or Invalid?
- valid (Fresison)

5. All things inflammable are unsafe things, so all things that are safe are nonexplosives, because all explosives are flammable things.

Step 1: Break into premises and conclusion and symbolize

P1: All things inflammable are unsafe things.
P2: All explosives are flammable things.
C: All things that are safe are nonexplosives.

P1: All F are nonS => No F are S (obverse)
P2: All E are F
C: All S are nonE => No S are E (obverse)

Step 2: Translate into Standard Form
S = S
P = E
M = F

P1: No M are S (minor premise)
P2: All P are M (major premise)
C: No S are P
Major premise: All P are M  
Minor premise: No M are S  
C: No S are P

Step 3: Mood and figure: AEE - 4

Step 4: Diagram <insert diagram here>

Step 5: Valid or Invalid?  
   - valid (Camenes)

6. All worldly goods are changeable things, for no worldly goods are things immaterial, and no material things are unchangeable things.

Step 1: Break into premises and conclusion and symbolize

P1: No worldly goods are things immaterial.  
P2: No material things are unchangeable things.  
C: All worldly goods are changeable things.  

P1: No W are nonM => All W are M (obverse)  
P2: No M are nonC => All M are C (obverse)  
C: All W are C

Step 2: Translate into Standard Form  
S = W  
P = C  
M = M

P1: All S are M (minor premise)  
P2: All M are P (major premise)  
C: All S are P

Major premise: All M are P  
Minor premise: All S are M  
C: All S are P

Step 3: Mood and figure: AAA - 1

Step 4: Diagram <insert diagram here>

Step 5: Valid or Invalid?  
   - valid (Barbara)
7. All those who are neither members nor guests of members are those who are excluded; therefore no nonconformists are either members or guests of members, for all those who are included are conformists.

Step 1: Break into premises and conclusion and symbolize

P1: All those who are neither members nor guests of members are those who are excluded.
P2: All those who are included are conformists.
C: No nonconformists are either members or guests of members.

P1: All nonM are nonI => All I are M (contrapositive)
P2: All I are C
C: No nonC are M => No M are nonC (converse) => All M are C (obverse)

Step 2: Translate into Standard Form
S = M
P = C
M = I

P1: All M are S (minor premise)
P2: All M are P (major premise)
C: All S are P

Major premise: All M are P
Minor premise: All M are S
C: All S are P

Step 3: Mood and figure: AAA - 3

Step 4: Diagram <insert diagram here>

Step 5: Valid or Invalid?
- invalid (illicit minor)

8. All mortals are imperfect beings, and no humans are immortals, whence it follows that all perfect beings are nonhumans.

Step 1: Break into premises and conclusion and symbolize

P1: All mortals are imperfect beings.
P2: No humans are immortals.
C: All perfect beings are nonhumans.

P1: All M are nonP => No M are P (obverse)
P2: No H are nonM => All H are M (obverse)
C: All P are nonH => No P are H (obverse)

Step 2: Translate into Standard Form
S = P
P = H
M = M

P1: No M are S (minor premise)
P2: All P are M (major premise)
C: No S are P

Major premise: All P are M
Minor premise: No M are S
C: No S are P

Step 3: Mood and figure: AEE - 4

Step 4: Diagram <insert diagram here>

Step 5: Valid or Invalid?
   - valid (Camenes)

9. All things present are nonirritants; therefore no irritants are invisible objects, because all visible objects are absent things.
P1: No M are S (minor premise)
P2: No P are M (major premise)
C: No S are P

Major premise: No P are M
Minor premise: No M are S
C: No S are P

Step 3: Mood and figure: EEE - 4

Step 4: Diagram <insert diagram here>

Step 5: Valid or Invalid?
- invalid (exclusive premises)

10. All useful things are objects no more than six feet long, because all difficult things to store are useless things, and no objects over six feet long are easy things to store.

Step 1: Break into premises and conclusion and symbolize

P1: All difficult things to store are useless things.
P2: No objects over six feet long are easy things to store.
C: All useful things are objects no more than six feet long.

P1: All D are nonU => No D are U (obverse)
P2: No O are nonD => All O are D (obverse)
C: All U are nonO => No U are O (obverse)

Step 2: Translate into Standard Form
S = U
P = O
M = D

P1: No M are S (minor premise)
P2: All P are M (major premise)
C: No S are P

Major premise: All P are M
Minor premise: No M are S
C: No S are P

Step 3: Mood and figure: AEE - 4
Step 4: Diagram <insert diagram here>

Step 5: Valid or Invalid?
- valid (*Camenes*)