

Parallel Reasoning

1. The statement, “When a region is in a drought, the water level of rivers and streams is seriously reduced,” can be pictured as:

$$D \rightarrow WR$$

The statement, “When water levels are down, food is also scarce for wildlife,” can be pictured as:

$$WR \rightarrow FS$$

The statement “if food is not scarce for wildlife, then the region is not in a drought” can be pictured as:

$$\sim FS \rightarrow \sim D$$

The diagram for the entire passage looks like this:

$$\begin{array}{l} D \rightarrow WR \\ \underline{WR \rightarrow FS} \\ \sim FS \rightarrow \sim D \end{array}$$

The diagram shows the argument to be a valid application of the transitive and contrapositive properties.

Take a minute to diagram the five possible answers. In choice (B), the statement, “If the temperature falls below freezing, the petunias will die” can be pictured as:

$$F \rightarrow PD$$

The clause “if the petunias die, they will not flower any more” can be pictured as:

$$PD \rightarrow NF$$

Finally, the clause “if the petunias still produce flowers, the temperature is not below freezing” can be pictured as:

$$\sim NF \rightarrow \sim F$$

If you diagram the entire petunia passage, it looks like this:

$$\begin{array}{l} F \rightarrow PD \\ \underline{PD \rightarrow NF} \\ \sim NF \rightarrow \sim F \end{array}$$

The diagram follows the same sequence as the diagram for the passage. Thus the argument in selection (B) is also a valid application of the transitive and contrapositive properties. The answer is selection (B).

2. This passage applies the transitive property, just like the preceding passage did. *“If you make good grades in high school, you will get into a good college”* can be diagrammed as:

GG—>GC

The next statement, “If you get into a good college, you will find a good job,” can be diagrammed as follows:

GC—>GJ

Finally, if you combine these two statements using the transitive property, your diagram will look like the following:

GG—>GJ

The author concludes that good grades in high school will result in a good job.

Quickly diagram out the statements contained in each of the five possible answers. Notice that selection (C) also makes use of the transitive property. The first statement, *“If you plant your garden in healthy soil, your vegetable plants will grow well,”* can be diagrammed as follows:

HS—>PG

The next statement, “If your vegetable plants grow well, you will have a high vegetable yield,” looks like the following:

PG—>HY

If you combine these two statements using the transitive property, your conclusion will be: *“If you plant your garden in healthy soil, you will*

have a high vegetable yield” and your diagram will look like:

HS—>HY

This is the same reasoning followed in the passage. As a result, selection (C) is correct. The other selections do not follow the same reasoning presented in the passage.

3. The error in this passage is that it affirms the conclusion. The first sentence, *"People who do well in the sled pull competition have tremendous upper body strength,"* is represented by the following:

SP—>UBS

The next sentence, *"Caleb has tremendous upper body strength,"* affirms the conclusion. But the last sentence, *"Therefore, Caleb performed well in the sled pull competition,"* invalidly affirms the premise that leads to the conclusion. This fallacy is diagrammed below.

SP—>UBS
UBS
 SP

This diagram clearly displays the fallacy in affirming the conclusion.

In selection (B), the same fallacy exists. It can be demonstrated by diagramming the sentences in selection (B). *"People who swim competitively are thin and muscular. Ben is thin and muscular. Therefore, Ben is a competitive swimmer."*

SC—>TM
TM
 SC

Diagramming one of the other answer choices shows why the flaw exists in both the passage and selection (B). For example, take selection (D). *"People who are overly sensitive to the cold cannot work at the Arctic substation"* can be diagrammed as:

OS—>~AS

The last part of selection (D), *"John is overly sensitive to the cold. Therefore John cannot work at the*

Arctic substation," adds to the diagram as follows:

OS—>~AS
OS
 ~AS

In selection (D), the premise and conclusion are merely repeated in the last two sentences. In contrast, in the last part of the passage and in selection (B), the conclusion is used to affirm the premise. By diagramming these two different selections, the fallacy in the passage and in selection (B) becomes clear.

4. Diagramming this problem helps to simplify it. The sentence, "If the City Parks Department receives the same allocation in next year's municipal budget, it is expected to raise admission fees to the indoor recreation center by fifty cents," can be diagrammed as:

SA—>50¢

SA stands for "receives the same allocation in next year's municipal budget" and **50¢** stands for "raise admission fees to the indoor recreation center by fifty cents." The next sentence, "*If the City Parks Department announces a higher admission fee increase, then its budget allocation for next year must have been reduced,*" can be diagrammed as:

~50¢—>~SA

This diagram can be recognized as the contrapositive. Thus, in finding the answer to this problem, you should look for an "if, then" statement and its contrapositive. In selection (C), the sentence, "*If the price of raw plastic pellets remains the same, companies that manufacture molded plastic parts such as fishing tackles and other plastic fishing bobbers can be expected to keep their wholesale prices at last year's levels,*" can be diagrammed as follows:

P\$—>W\$

P\$ stands for "the price of raw plastic pellets remains the same" and **W\$** stands for "keep their wholesale prices at last year's

levels." The sentence, "*Thus, if these wholesalers raise their prices on fishing bobbers, it will be because raw material costs increased.*" can be diagrammed as follows:

~W\$—>~P\$

This is the contrapositive of **P\$—>W\$**. The reasoning is the same as that expressed in the passage. The answer is selection (C).

5. Let T stand for “*the rebels truly want a political settlement,*” and let S stand for “*they will stop shelling the Capitol.*” Now the argument can be symbolized as

$$\begin{array}{l} T \rightarrow S \\ \underline{S} \\ T \end{array}$$

This diagram clearly shows that the argument is committing the fallacy of affirming the conclusion. The answer will commit the same fallacy.

Begin with choice (A). The clause “*I’m allergic to cats*” contains an embedded *if-then* statement: “*If there is a cat around, I start sneezing.*” This in turn can be symbolized as $C \rightarrow Sn$, where C stands for “*there is a cat around,*” and Sn stands for “*I start sneezing.*” Substituting these symbols into the argument yields

$$\begin{array}{l} C \rightarrow Sn \\ \underline{Sn} \\ C \end{array}$$

The diagram shows that this argument has the same structure as the original argument. The answer is (A).

6. In order to find the solution to this question, you should diagram the arguments presented in the passage and in the answer selections. The first clause, “*If Joan were growing marijuana plants in her home,*” can be symbolized as **MP**. The second clause, “*she would not allow police investigators to search her home without a warrant,*” can be symbolized as $\sim S$. The entire

argument can be diagrammed as follows:

$$\begin{array}{l} M \rightarrow \sim S \\ \underline{S} \\ \sim MP \end{array}$$

This diagram shows that the argument is a valid application of the contrapositive.

Diagram each of the answer selections. For instance, selection (C) can be diagrammed as follows, where >30 represents “*If Jason were over 30,*” and $\sim RM$ represents “*he would not want to listen to rap music.*” Diagramming the entire selection would look like this:

$$\begin{array}{l} >30 \rightarrow \sim RM \\ \underline{RM} \\ >30 \end{array}$$

As can be seen from the diagram, it does not correspond to the logic in the passage. Now, let’s diagram selection (A). The first clause, “*If Justin were playing golf at the city golf course,*” can be represented as **G**, and the second clause, “*he would not be home until dinner,*” can be represented as $\sim H$. The rest of the argument can be represented as follows:

$$\begin{array}{l} G \rightarrow \sim H \\ \underline{H} \\ \sim G \end{array}$$

As you can see, the logic is the same in selection (A) as it is in the passage. It is a valid application of the contrapositive. You should also diagram the remaining selections to see how their logic patterns differ from the logic presented in the passage.

7. This argument is fallacious—and unfair—because it assumes that all artists support government sponsorship of the arts. Some artists, however, may have reasons for not supporting government sponsorship of the arts. For example, they may believe that government involvement stifles artistic expression. Or they may reject government involvement on purely philosophical grounds. The argument suggests a person’s profession taints his opinion. Choice (C) does the same thing, so it is the answer.

8. (A) No. The passage uses an example to illustrate a statement: “*although all birds have feathers and all birds have wings, some birds do not fly.*” Choice (A), however, draws a contrast between two approaches.

(B) Yes. The passage uses an example to illustrate a statement: “*although all birds have feathers and all birds have wings, some birds do not fly.*” Similarly, choice (B) uses an example to illustrate a statement: “*not all chairs are used for sitting in spite of the fact that all chairs have a seat and some support such as legs.*”

(C) No. The passage uses an example to illustrate a statement: “*although all birds have feathers and all birds have wings, some birds do not fly.*” Choice (C) does not have an example.

(D) No. The passage uses an example to illustrate a statement: “*although all birds have feathers and all birds have wings, some birds do not fly.*” Choice (D) does not have an explicit example.

(E) No. Choice (E) draws a comparison between two ships. However, the passage does not draw a comparison between ostriches and penguins; rather it merely uses each to illustrate a statement: “*although all birds have feathers and all birds have wings, some birds do not fly.*”

9. With parallel pattern of reasoning questions, we first identify the structure and validity of the passage, and then consider each answer-choice in turn. The argument in the passage may be diagrammed as follows:

Dollar drops —> Quarterly loss
Quarterly loss
Dollar dropped

This argument is invalid since it commits the fallacy of affirming the conclusion.

Consider choice (D):

Sunny —> Biff goes to beach
Biff goes to beach
Sunny

The answer is (D).
As for (A), a diagram shows:

4th of July weekend —> Parking enforced
Parking enforced
July 4th

This appears to have the same structure as the original passage, but it is in fact much stronger. While the premise in (A) discusses the 4th of July weekend, the choice concludes the day is July 4th itself.

Choices (B) and (C) exhibit valid reasoning and therefore cannot be parallel to the original argument. Finally, it’s hard to know exactly what choice (E) is saying.