

Linköping University

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Communications and Transport Systems

Department of Science and Technology

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Solution, homework 5

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Exercise 1:

We observed major differences in the reaction times of the two study subjects.

Exercise 2:

Since 1990, NASA spending has been flat. In addition, it will shift some funds that once were earmarked for space programs into aeronautical projects.

Exercise 3:

Because the development and tooling costs associated with a new aircraft program require an enormous amount of capital, manufacturers take an international approach.

Alternative:

Because of the economies of scale necessary for success in today's commercial market (the development and tooling costs associated with a new aircraft program require an enormous amount of capital), manufacturers take an international approach.

Exercise 4:

Only a few industries exist where one can go to sleep at night and wake up the next morning faced with challenges that did not exist the prior day.

Exercise 5:

The effect of a slight change in departure time on passenger buying behavior creates a powerful incentive for carriers to increase flight frequency, even when plenty of seats are available on existing flights.

Better:

Because a slight change in departure time effects passenger buying behavior, carriers increase flight frequency, even when plenty of seats are available on existing flights.

Exercise 6:

Temperatures increased recently because a low-pressure system has stalled off the coast.

Exercise 7:

Why is the origin of the Earth's axis system located at the center of mass of an airplane, although the Earth's axis system should be motionless and inertial?

Exercise 8:

During the last three winter seasons at least one airplane crash with many damaged and killed was

reported in the USA and Canada.

Exercise 9:

- (a) Variant 1: The proposal to shut down half of the country's airports has caused an outcry. Angry letters have been pouring into the administration. Variant 2: The proposal to shut down half of the country's airports has caused an outcry, and angry letters have been pouring into the administration.
- (b) Between 1969 and 1978, fuel costs rose 222 percent (to 20 percent of operating expenses); inflation boosted labor costs (to 45 percent of operating expenses); and the stagnation of the gross national product curtailed demand growth (from 18 percent to 4 percent per annum).
- (c) The chief executive officer of engineering and maintenance (E & M) is the senior vicepresident, whose responsibilities are as broad as the mission of this administration: to keep the company's equipment in condition to provide safe and salable air transportation.

Explain the difference between

- (e) A woman-hating religion is a religion that does not value women. A woman hating religion is a female human being that does not value religion.

Exercise 10:

The church's record-keeping system is accurate and reliable (2). When a new member is baptized, the church congregation creates a member record that includes: name, date of birth, parents names, current address, and dates of church ordinances. A lay clerk enters these records into a general church database and updates them to reflect dates of new ordinances (e.g. marriage), spouse name, changes of address, and date of death. Members may review their membership records once a year, which helps ensure accuracy. When a member dies, the membership record is archived.