a)i) mammary glands

ii) Australopithecus afarensis has a smaller cranial capacity than Homo Sapiens. The height of Homo Sapiens is taller than Australopithecus afarensis which is much shorter.

b)i) Information from ~~secondary sources~~ would be gathered from a variety of secondary sources, such as reference books, internet sites, television documentaries, scientific journal articles or encyclopaedias. The information could be gathered by ~~reading~~ first finding some general information on radiometric data, to obtain a general understanding, and then researching more specific information about the use of radiometric data ~~data in too~~ to date fossils. In reference books or encyclopaedias, the index could be used to search for information relating to the topic. Library reference facilities could also be used, which may have catalogues of articles or documentaries relating to ~~studies for~~ palaeontology or human evolution.

ii) Collect all information from a variety of different sources, ~~~~~~~~ which would increase the validity of the information.

- Skim or browse through large amounts of information, paying attention to subheadings, features, underlines etc. to determine whether or not it was relevant.

- Confirm any dates or factual information from at least 3 sources.

- Look for references on internet pages or articles which ~~~~~~~~ may provide links to ~~~~~~~~ scientific publications or additional data with which the information could be compared.

c). Polymorphism is the appearance in the population of 2 or more genetically determined phenotypes (ie 2 or more alleles at the same locus ~~locus position~~).

Skin colour is a polymorphic characteristic in humans. Skin colour is produced by the pigment ~~melanin~~ melanin. ~~It As~~ Melanin protects against the harmful effects of u.v. light such as skin cancer. This may be why people in the tropics and near the equator have dark skin as they are better adapted to this environment. However, it is often argued that most people who die of skin cancer are already past reproductive age, and thus, their genes have already been passed down (whether they be for light or dark skin). People further from the equator and in cloudy areas often have paler skin. This is an advantage in these areas as it allows vitamin D to be ~~produced~~ synthesised even though there is little light, and this is important in
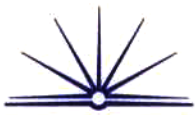
preventing diseases such as rickets. This
fact may explain why humans have evolved
to have both pale and dark skin.

d). Feature: tail.

Prosimians - have a tail. This is useful for
→ they walk on top of branches
balancing in trees (they lead an aboreal life).
In Prosimians such as lemurs, their black and
white tail is also raised up as a marker so
that ~~each member~~ lemurs can follow eachother
by looking at the tail.

Monkeys - new-world monkeys have a prehensile
                                for balance
tail which is useful as they spend all their time
(and walk along branches)
in trees. The prehensile-tail acts as a 5th limb
          ^
so can assist movement. In old-world monkeys
the tail is also or used for balance when in
trees.

Apes - do not have a tail. This is because many
are mainly ground-dwelling. They also do not
need it for balance if in the trees because most
move by brachiating in constrast to monkeys and
prosimians.

Humans - do not have a tail as ~~these is~~
~~unnecessary~~ they are constantly on the
ground and have an upright stance.
~~Static~~ Feature: Stance.

Prosimians and monkeys: are aboreal so are
quadrapedal as this allows them to best
balance in trees.

Apes: some apes such as gorillas can
partially walk (knuckle-walking), however,
most apes spend their time in trees so a
quadrapedal stance is more advantageous.

Humans: are upright and bipedal. This stance
is an advantage in areas such as grasslands
(humans are ~~were~~ thought to have come down from the
trees into the grasslands) as it is easier to
see predators. It also allows humans to have
free hands which assists them in manipulating
objects such as food and tools.

Clearly it is justified that the ~~these~~ ~~primi~~
differences and similarities between ~~them~~
primates are a result of evolution by natural
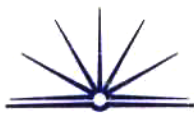
selection as they ~~evolved~~ adapted to particular ~~niches~~ niches.
(this is my conclusion).

of medical advancements - with
the mapping of the human genome
genetic diseases could be eliminated.
The gene ~~for~~ responsible for ageing
could be located & made ineffective
so that people live longer without
aging. This would increase the
numbers of people. This would
place stress on natural resources
as well as create starvation & overcr-
owding.
      Humans, through new medical procedures
~~its~~ will decrease morbidity & mortality
rates & in this process increase.
life expectancy.

Biological evolution refers to
the way the physical & genetic
makeup of humans will & have
changed over time. With this

type of evolution; information is passed through genetic information; change is very slow traditionally but with medical advancements this could be significantly sped up; environmental factors influence, like natural resources, or lack there of.

Increased mobility of populations will be a main factor affecting human biological evolution because the obviousness of clinal gradations & races will disappear. There will be gene pool mixing, maybe even to the point where there are just several large gene pools as opposed to now where there are numerous smaller gene pools. When this happens the great extent of variations will decrease as natural selection will chose the best genes to be continued

to be passed on.

Genetic engineering will be a main factor because it is a rapid way of making sure we have the desired traits rather then trying to breed them into us, which isn't possible when considering that some genetists will soon be able to add genetic material to our DNA ∧ to give us an desired feature, eg. to produce blood clotting proteins. in affect making us a transgenic species. However this might be done through gene therapy. ~~where~~ ~~a~~

from other species

By manipulating our genes we can create biological evolution - this can be done through genetic engineering, ie. we can change ~~our~~ ~~genotype~~ ~~to~~ phenotype by manipulating our genotype.

01/WB8