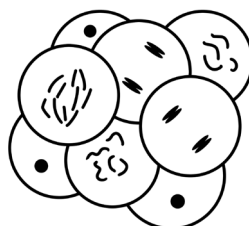


Name:

Class:



The diagram shows the cells of a mammalian embryo shortly after fertilisation.



i. Which is the correct description of these cells?

- A Gametes undergoing meiosis
- B Gametes undergoing mitosis
- C Stem cells undergoing meiosis
- D Stem cells undergoing mitosis**

ii. What is the second stage of protein synthesis?

Translation

iii. Where does this stage occur?

Ribosome/ cytoplasm/ RER.

iv. Compare and contrast mitosis and meiosis.

Mitosis produces 2 genetically identical diploid daughter cells in one division. It produces somatic cells.

Meiosis produces 4 genetically different haploid daughter cells in two divisions. It produces gametes.

What is a heterozygous gene?

A gene that has one dominant and one recessive allele.

What is an allele?

A single version of a gene.

State the names of the two scientists credited with determining the 3D model of DNA.

James Watson and Francis Crick

State the name of the female scientist whose work was vital for the determination of the 3D model of DNA.

Rosalind Franklin

A woman has a heart rate of 125 beats per minute. Each beat has a stroke volume of 55 ml. Calculate the cardiac output of the woman while she is running.

$$\text{cardiac output} = 125 \times 55$$

$$\text{cardiac output} = 6875 \text{ ml} = 6.875 \text{ L per minute}$$

$$\text{cardiac output} = \text{6.875 L per minute}$$

Which valve is found between the left atrium and left ventricle?

The bicuspid valve

Which valve is found between the left ventricle and Aorta?

The semilunar or aortic valve