

Paper Reference(s) 9BI0/01
Pearson Edexcel Level 3 GCE

Biology B
Advanced
PAPER 1: Advanced Biochemistry,
Microbiology and Genetics

Wednesday 7 June 2023 – Afternoon

Diagram Booklet

In the boxes below, write your name, centre number and candidate number.

Surname					
Other names					
Centre Number					
Candidate Number					

INSTRUCTIONS

There may be spare copies of some diagrams in case you need them.

**THIS DIAGRAM BOOKLET MUST BE
RETURNED WITH THE QUESTION PAPER
AT THE END OF THE EXAMINATION.**

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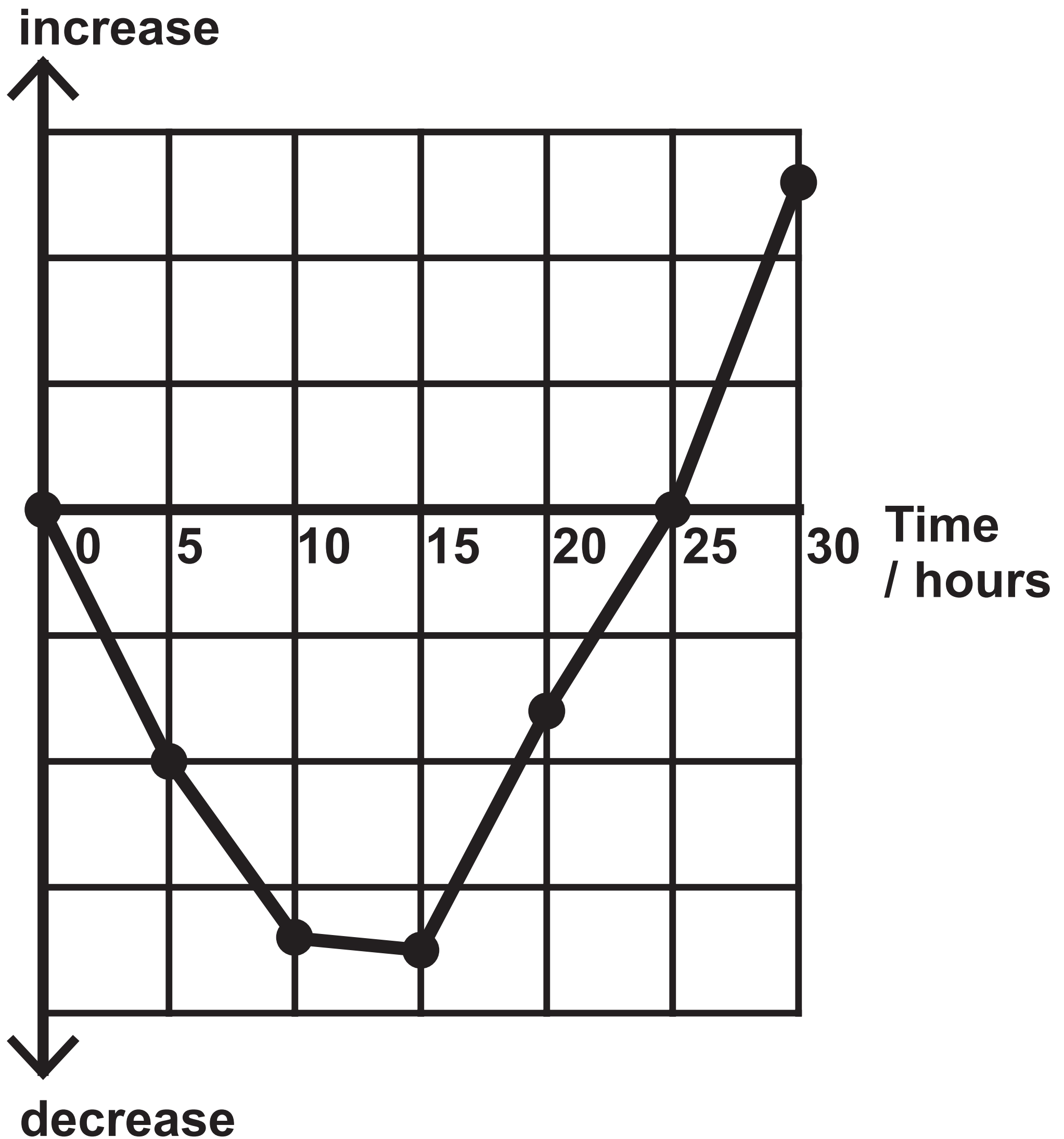
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Spare copies

19	Question 6(a)
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Question 1(b)

Change in concentration of potassium ions in the cells in the roots of the seedlings



Question 2(a)

Characteristic	Organisms in the domain Archaea
membrane-enclosed nucleus	absent
peptidoglycan in cell wall	absent
ribosomes	70S

Question 2(b)

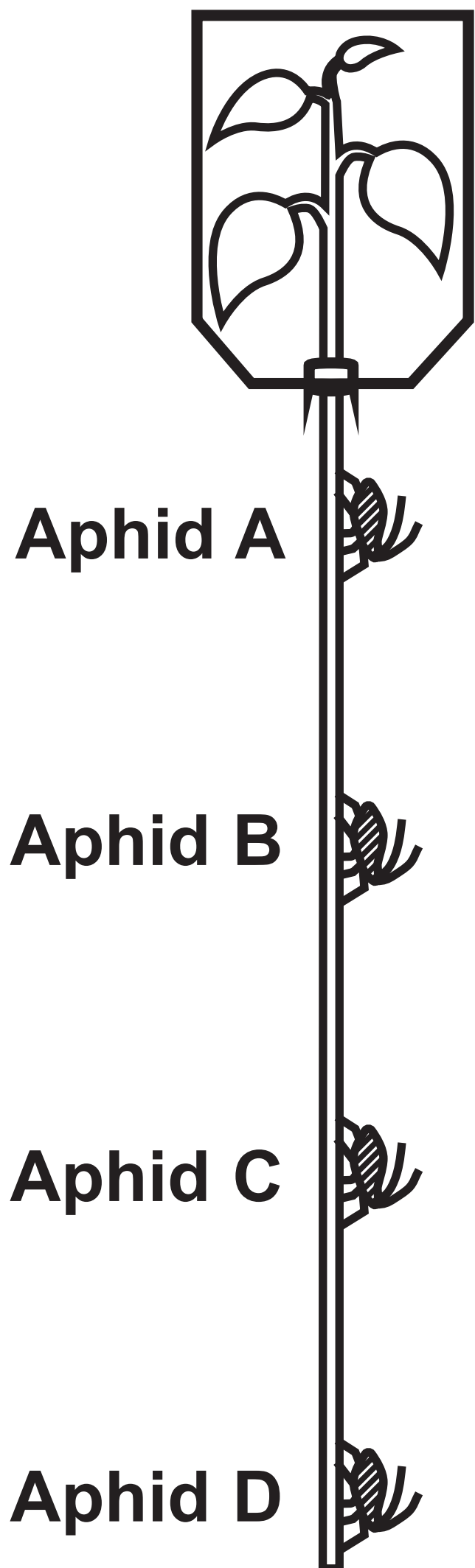
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Enzyme	Location in the cell	Substrate	Role of enzyme
AK1	cytoplasm	adenosine triphosphate (ATP)	transfers phosphate
AK3	mitochondria	guanosine triphosphate (GTP)	transfers phosphate

Question 3(b)

Statement	Type of tissue			
	both xylem and phloem	xylem only	phloem only	neither xylem nor phloem
Contain sieve plates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have cellulose in the cell walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have mitochondria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

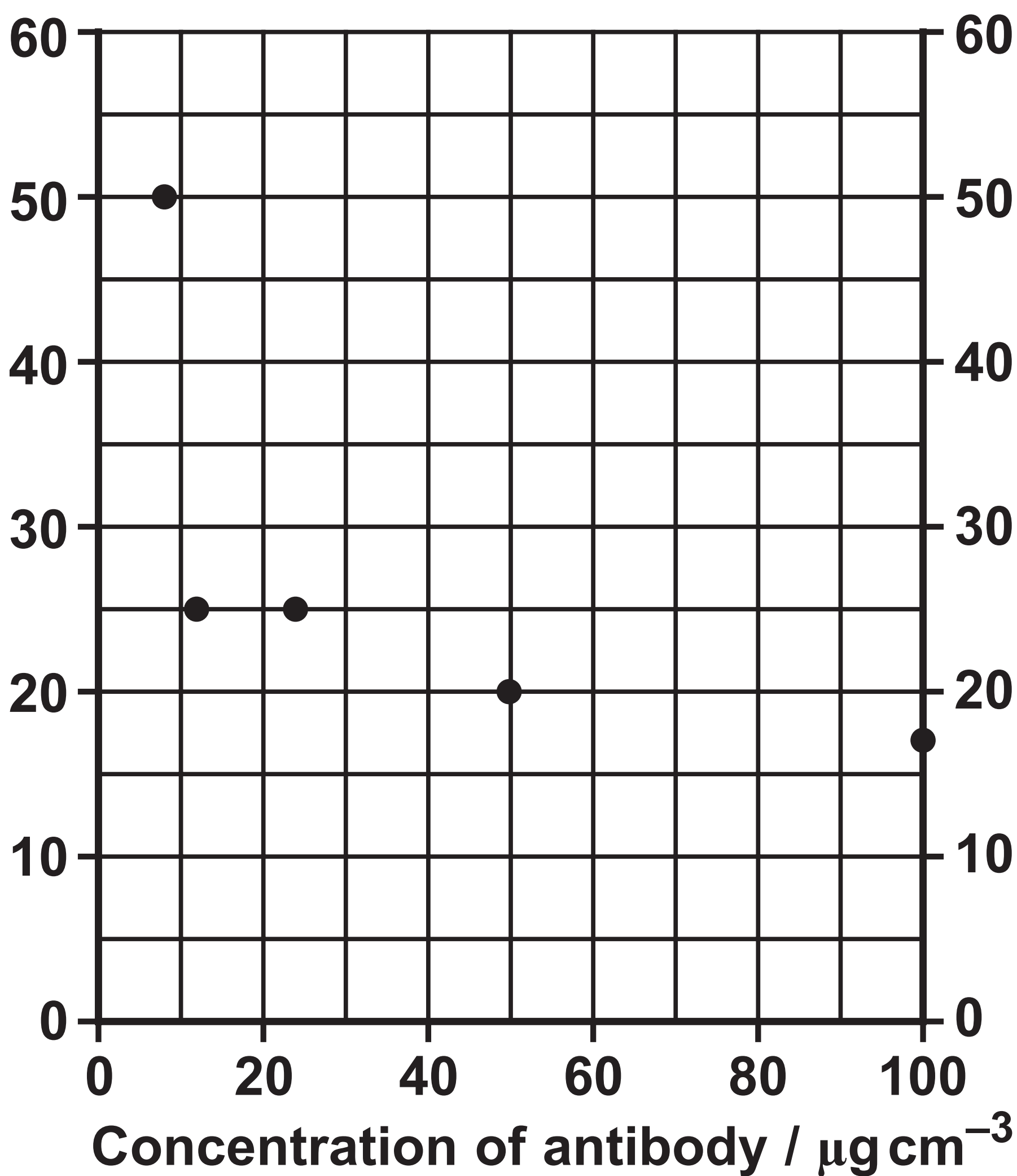
Question 3(c)(i)



1. The leaves of a plant are covered with a glass chamber containing radioactive carbon dioxide.
2. The plant produces radioactive sugars by photosynthesis.
3. Aphids, A, B, C and D are attached to the stem and allowed to feed on the contents of the phloem.
4. The aphids are analysed to determine the time at which radioactivity first appeared in their bodies.

Question 5(b)(ii)

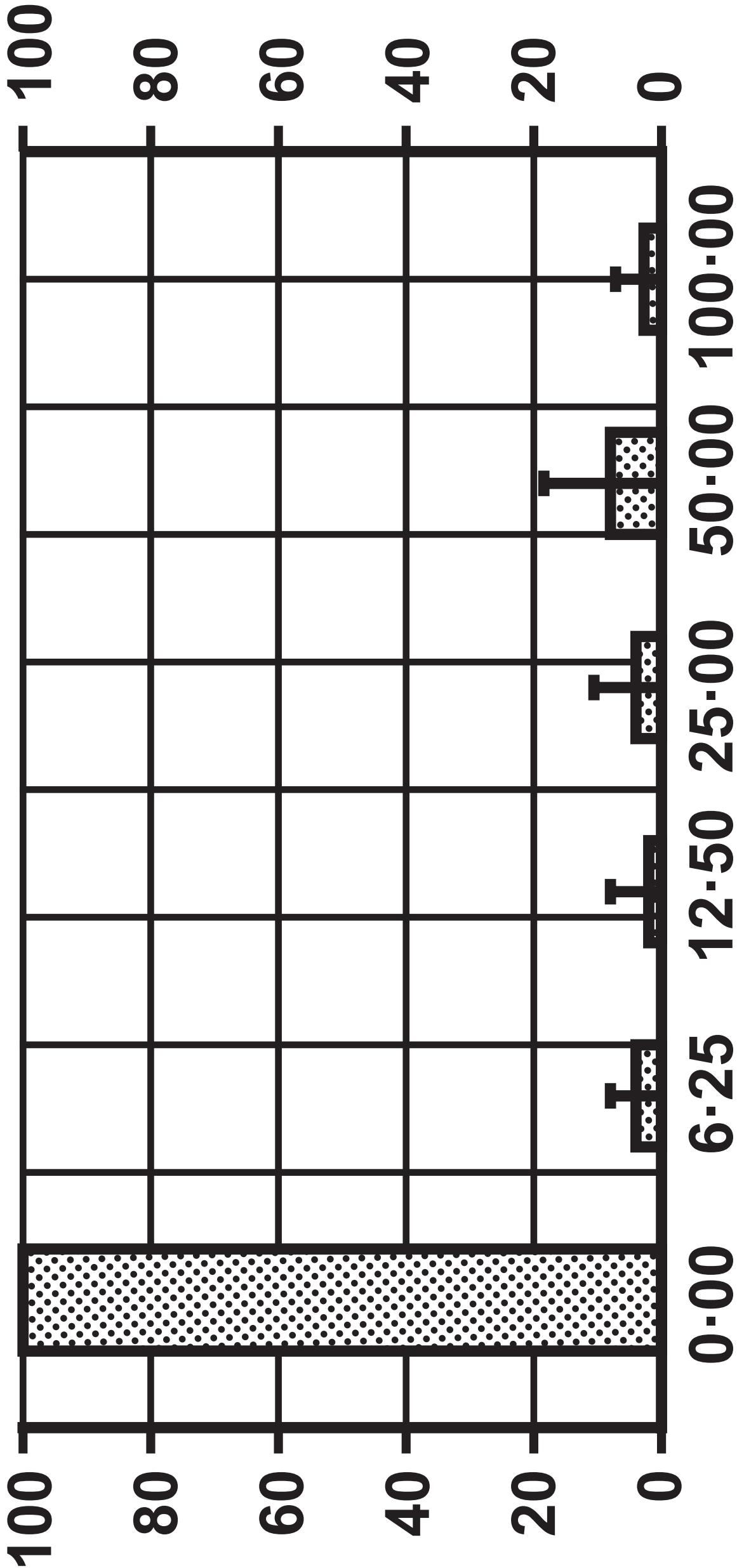
**Time taken for 100%
agglutination / secs**



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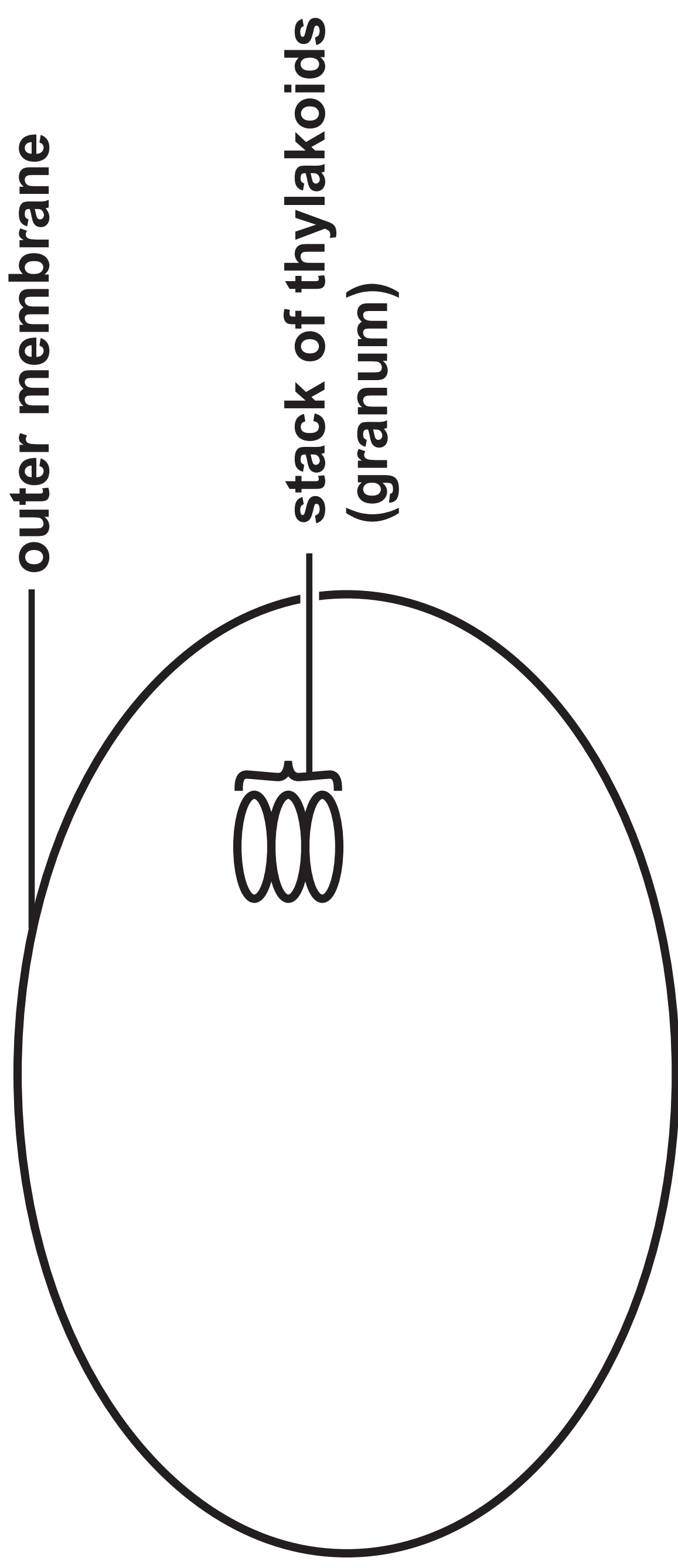
Percentage of sperm cells that escaped compared with the control with no antibody (%)



Concentration of antibody / $\mu\text{g cm}^{-3}$

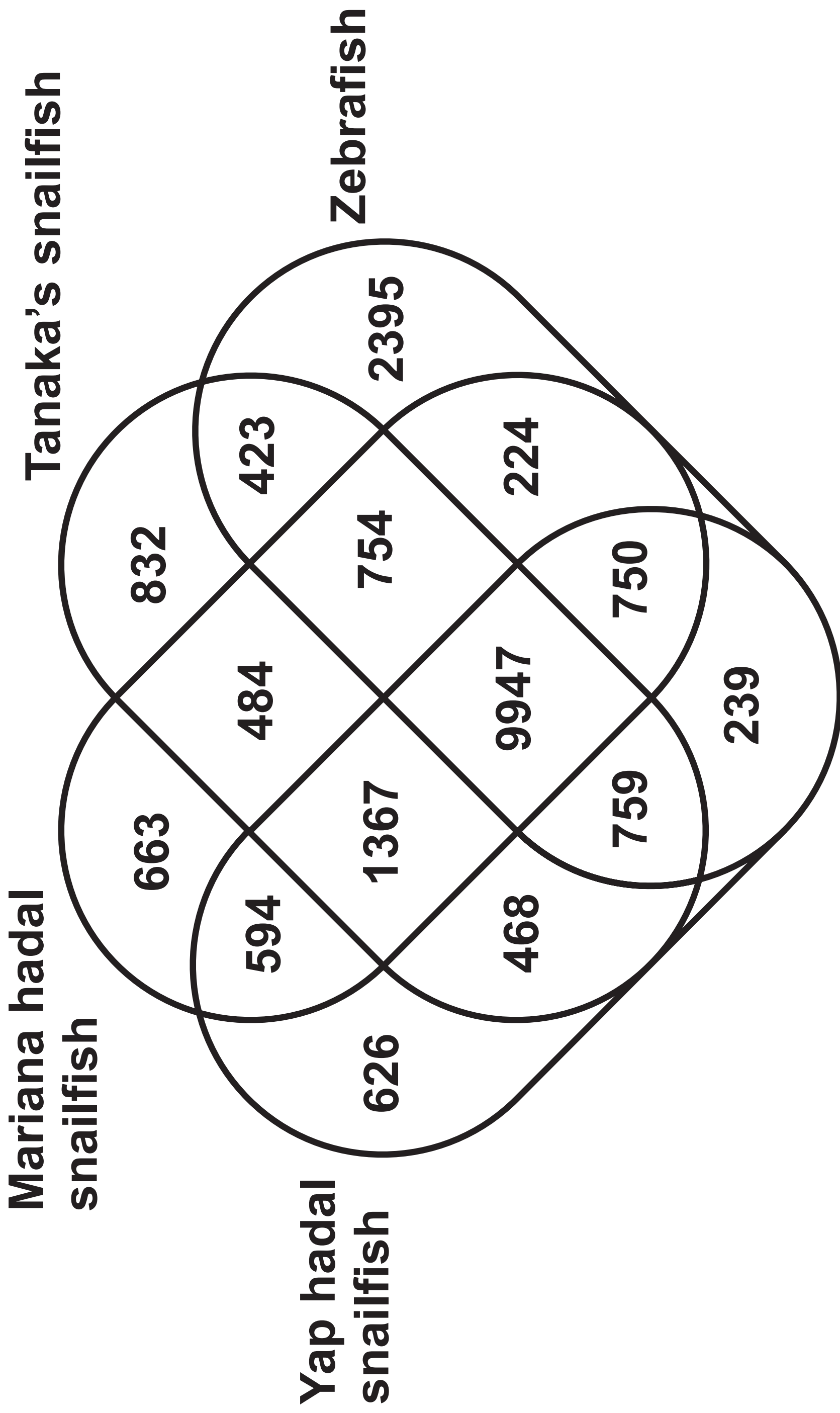
Question 6(a)

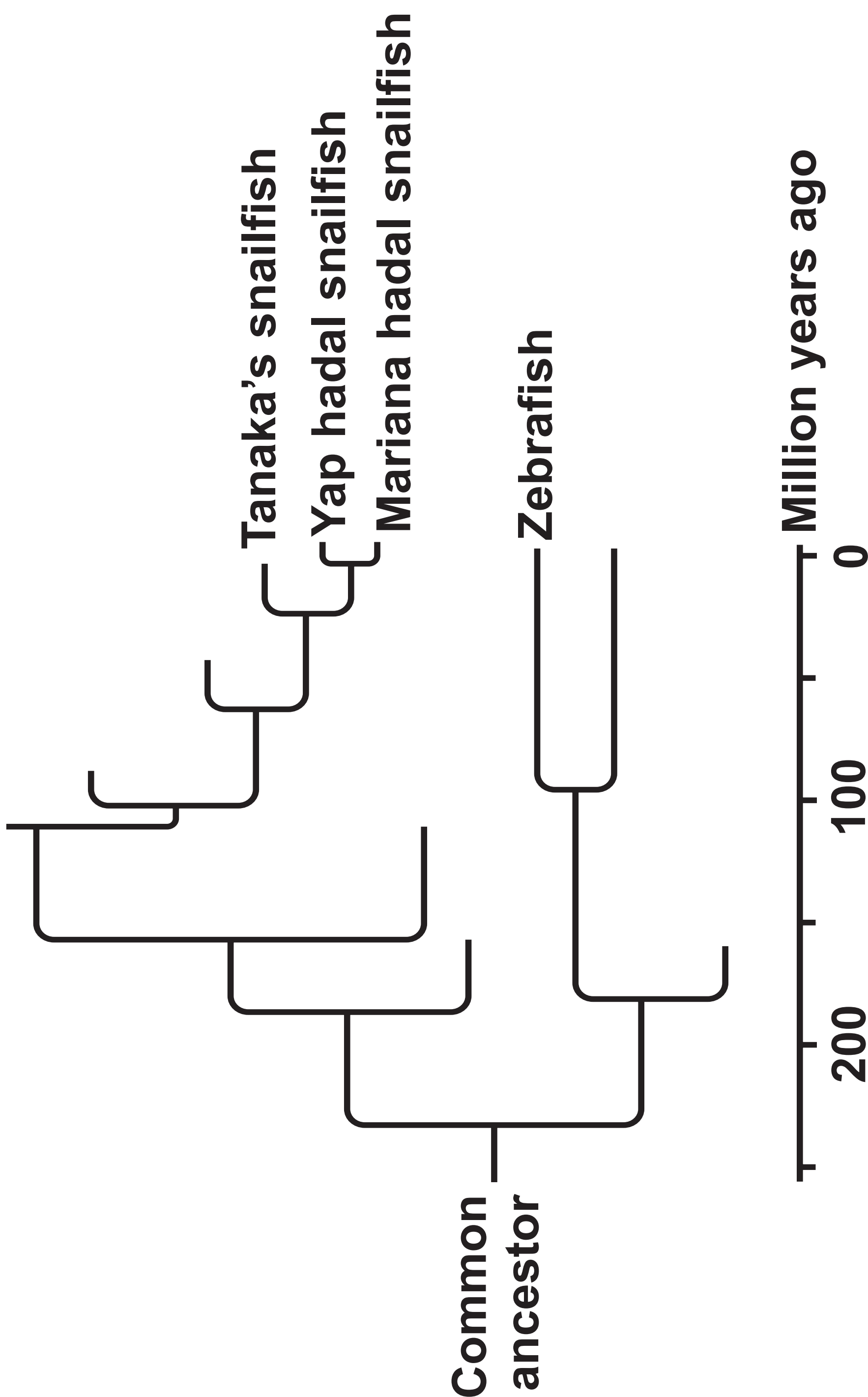
11

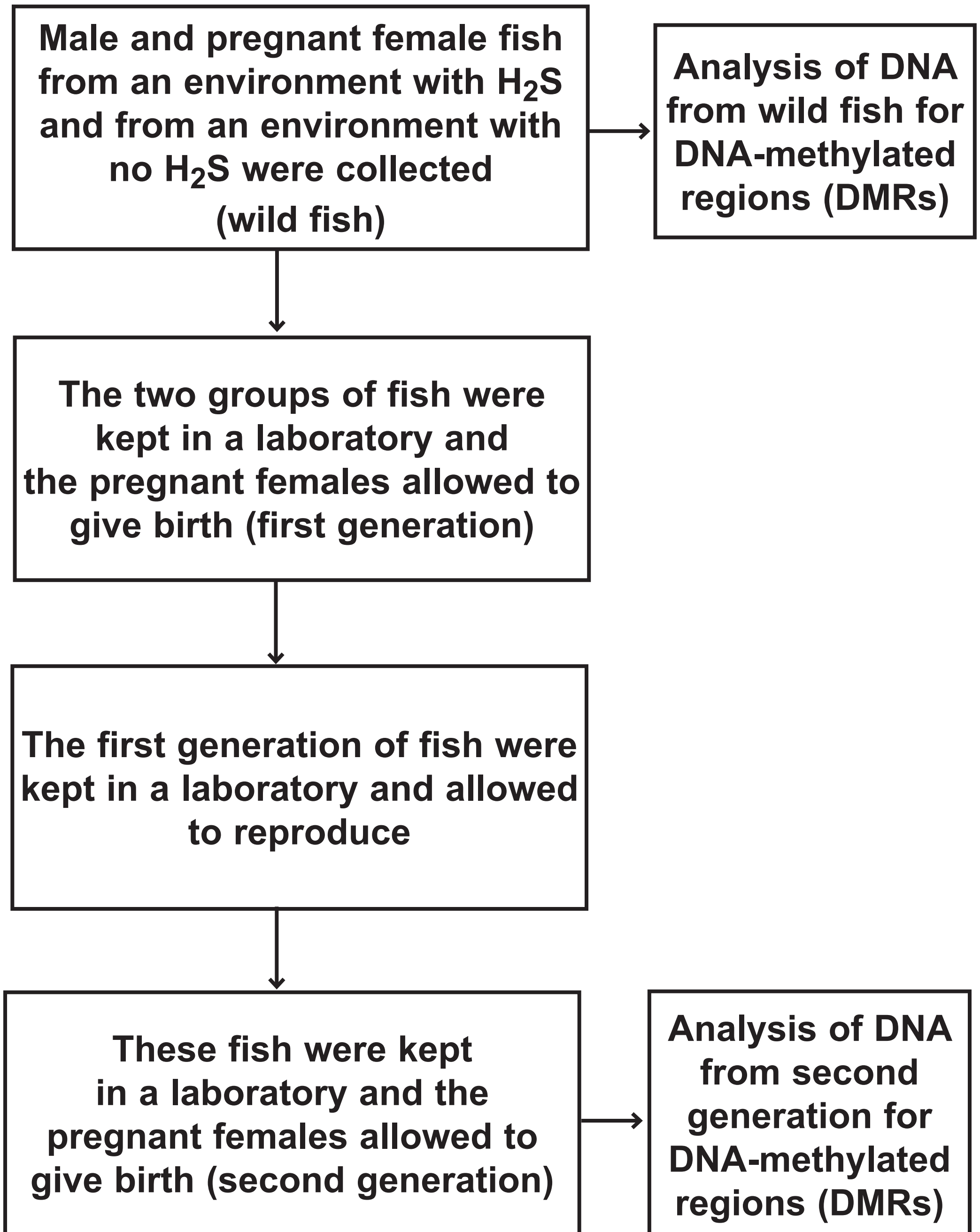


Question 7(b)(ii)

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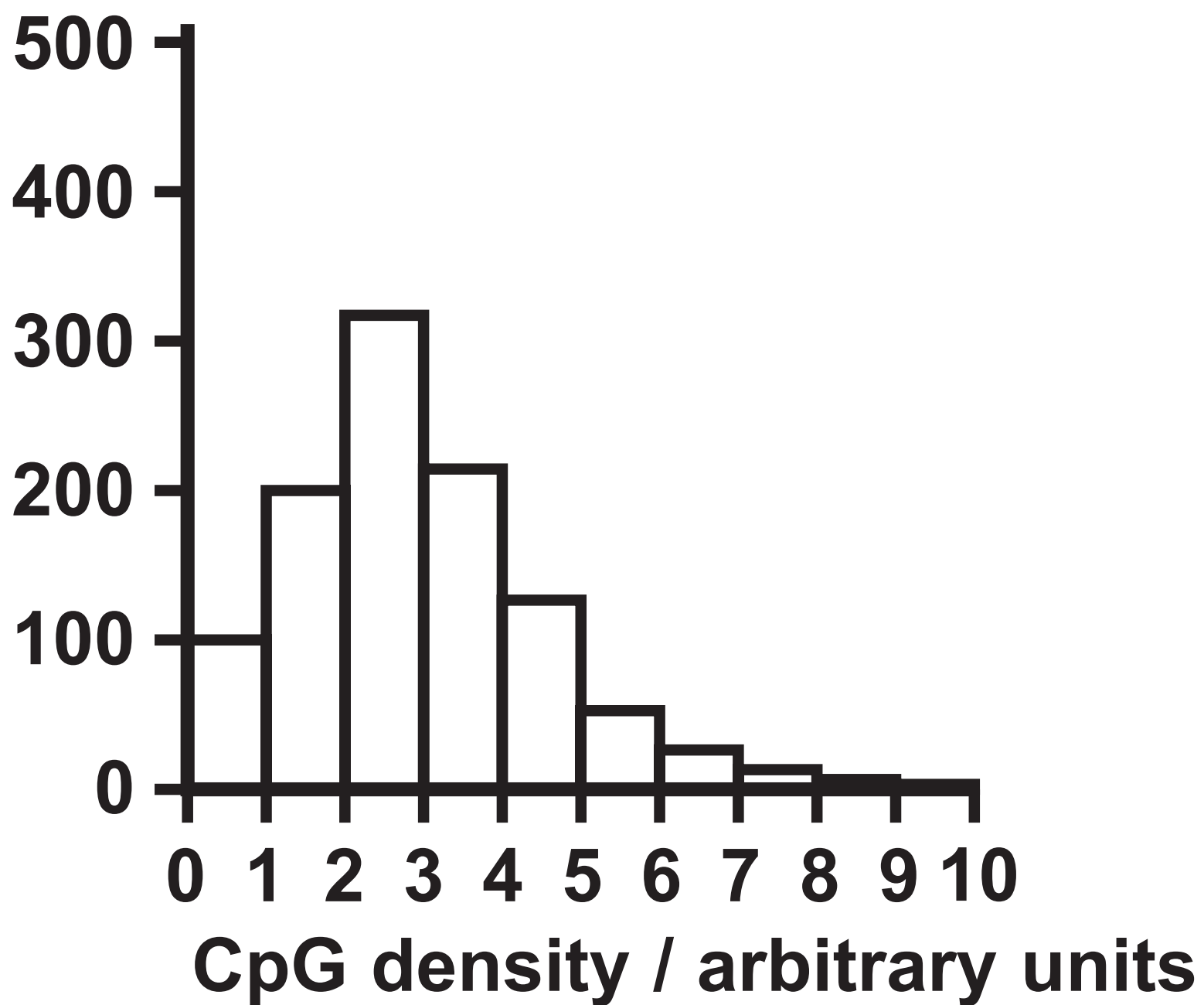


Question 9(c)**(continued on the next page)****Turn over**

Question 9(c)

**Graph 1: Wild male fish
fish from environment with H₂S compared
with fish from environment with no H₂S**

**Increase in
number of DMRs**



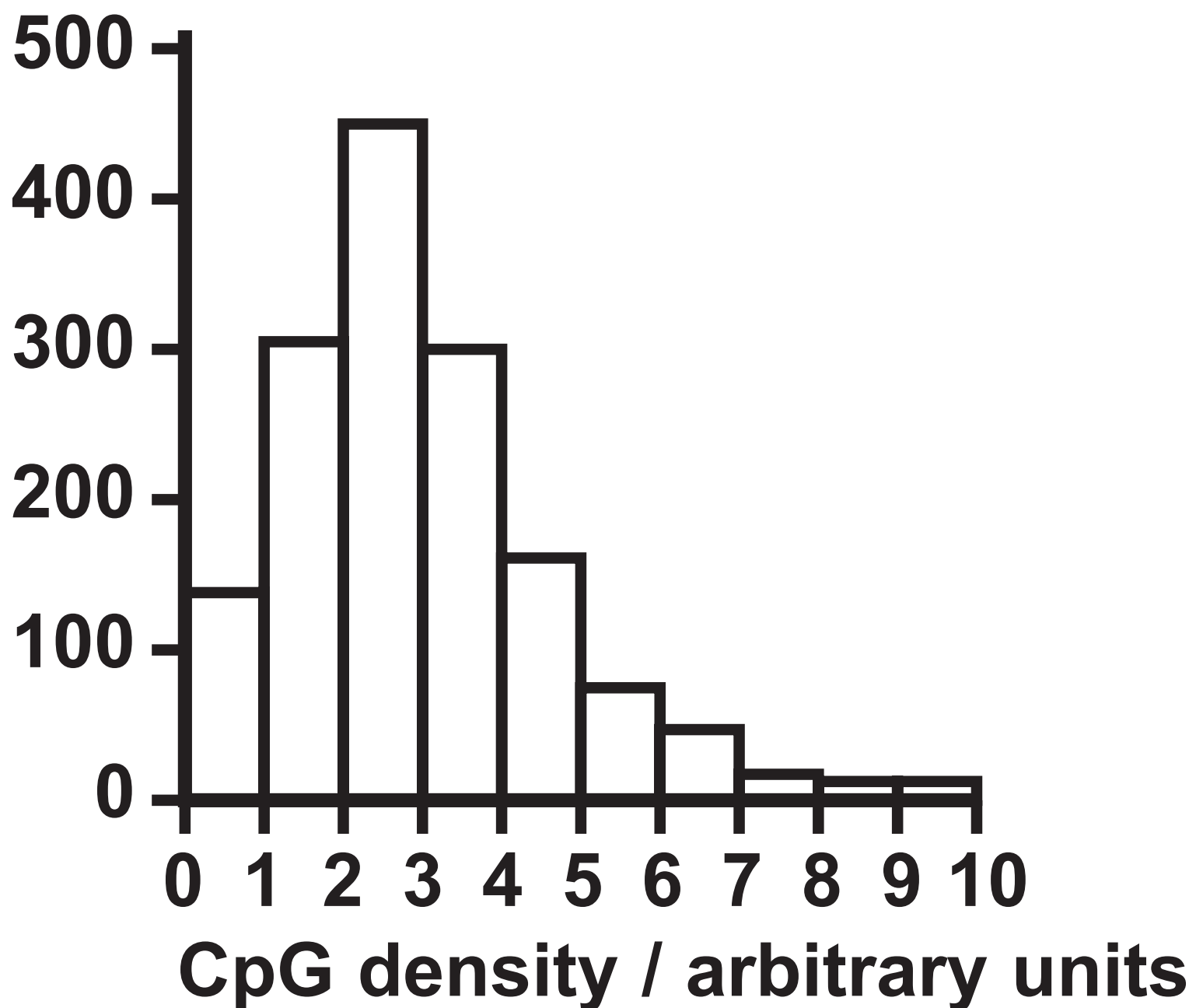
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Question 9(c)

**Graph 2: Wild female fish
fish from environment with H₂S compared
with fish from environment with no H₂S**

**Increase in
number of DMRs**



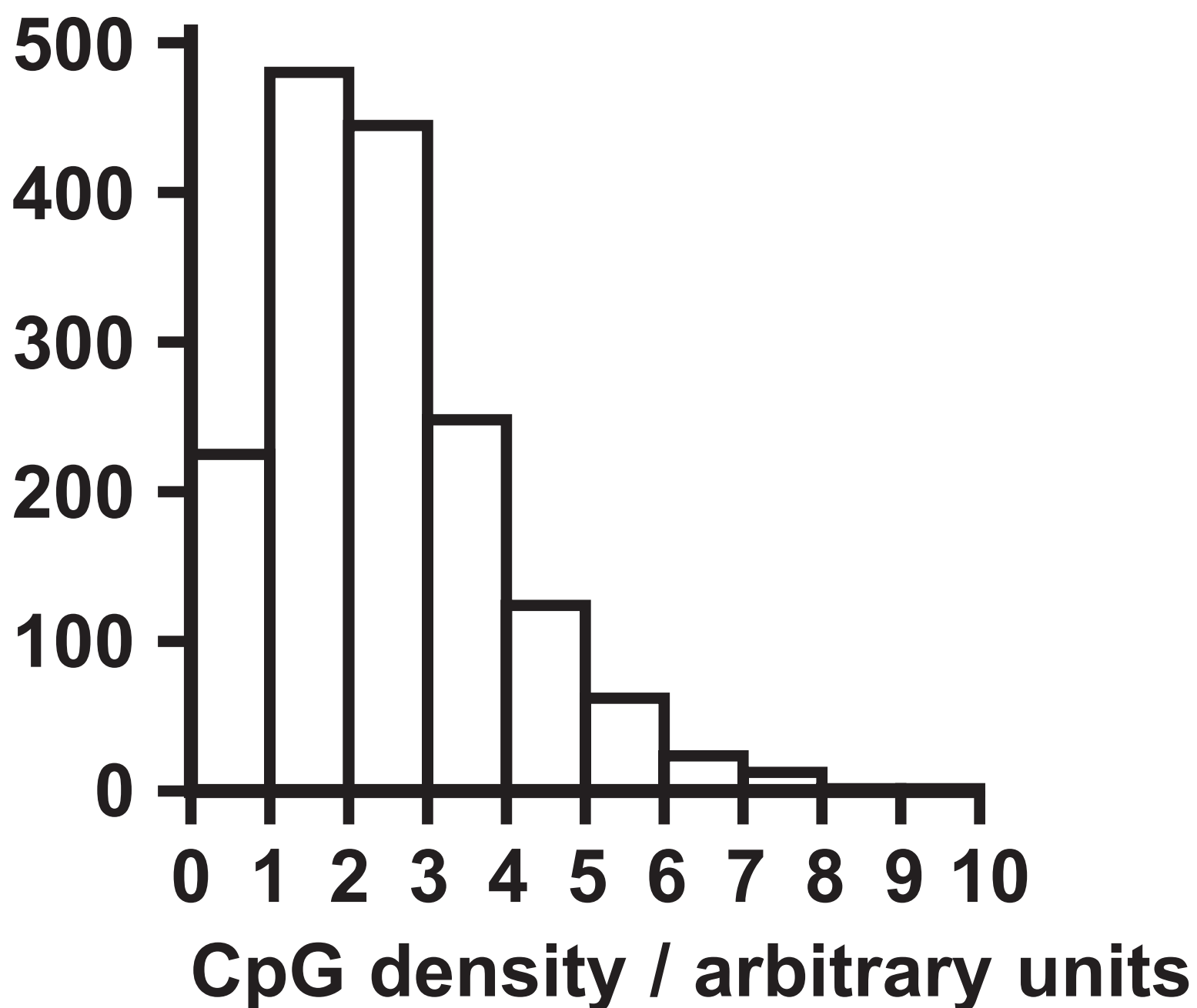
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Question 9(c)

Graph 3: Second generation male fish from environment with H_2S compared with fish from environment with no H_2S

**Increase in
number of DMRs**



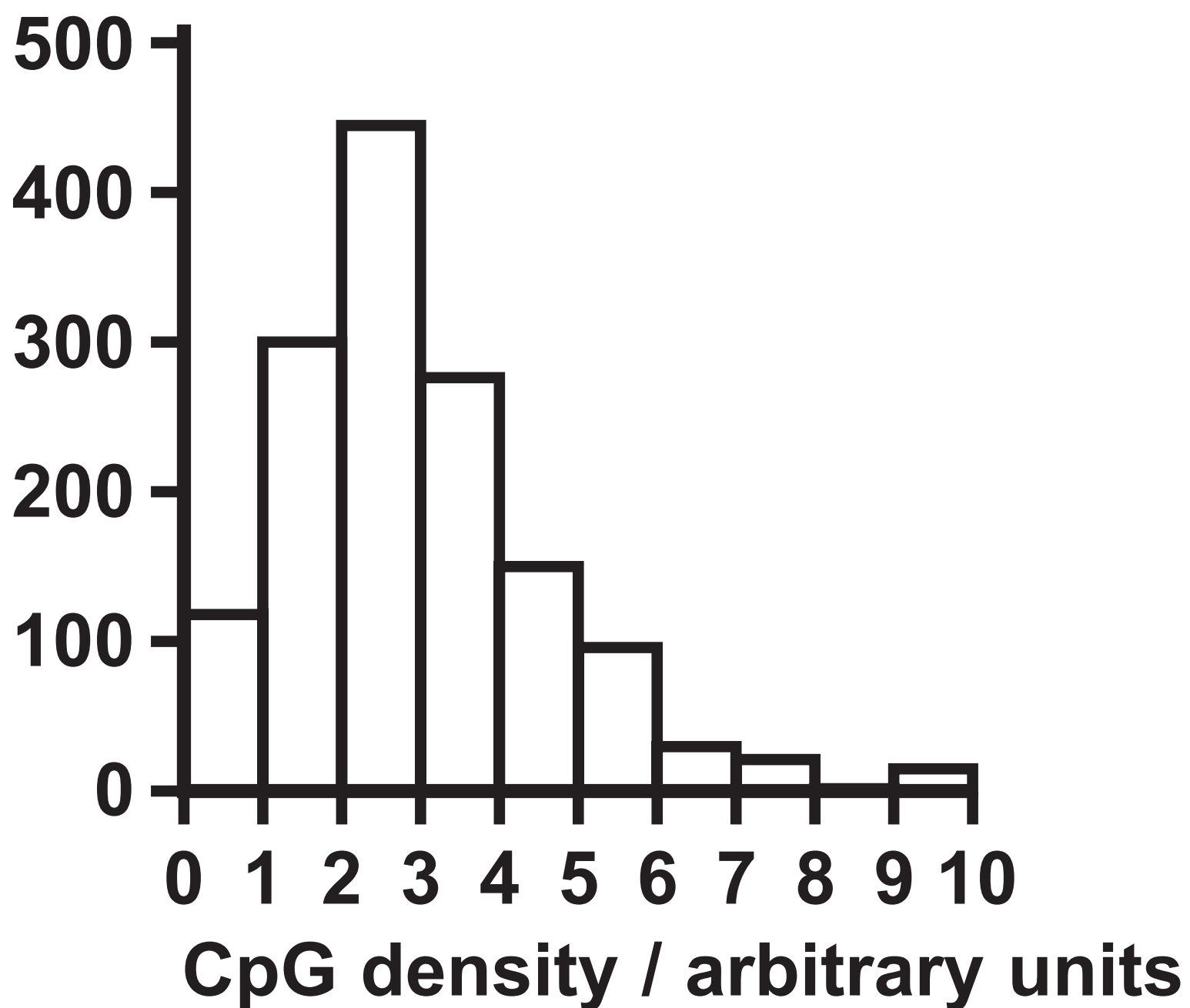
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Question 9(c)

**Graph 4: Second generation female fish
fish from environment with H₂S compared
with fish from environment with no H₂S**

**Increase in
number of DMRs**



Question 6(a)

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