



FORENSIK SCIENCE

Group....

Group Members:

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....
7. .....

LIVEWORKSHEETS

FORENSIC SCIENCE

A. Introduction

Question	Expected Answer
What do you know about Bioinformatics?	
What do you know about Forensic Science?	
What are the roles of Forensic Science in everyday life?	
How important is Bioinformatics in helping Forensic Science?	
What are the stages of Bioinformatics in solving Forensic Science problems?	
What are the tools used in Forensic Science	
Is there a connection between Forensic Science and Genetics?	

Now, let's watch a video on Forensic Science and DNA Fingerprinting.

a). Forensic

https://youtu.be/i7Lg0dUDzxk



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b). DNA Fingerprinting

https://www.youtube.com/watch?v=7onjVBsQwQ8



After watching the two videos above, give us your comments and thoughts!

B. Investigations

On March 4, 2023, there was a major fire at **Pertamina Pelumpang Depo** in North Jakarta, Indonesia. The fire was caused by a leak in the Pertamina gasoline pipeline object. A total of 33 victims were identified. Conventional identification methods left 6 victims unidentified. From the accident site, there are 6 victims who have not been identified and only fragments of the victim's bones remain. To identify them, they were sent to the Laboratory of Molecular Biology, then samples were taken from the victim's family or DNA left on the victim's toothbrush or hair. In this case, mtDNA and STR profiles were used to assist the genetic investigation

Modified from Article: Korban Jiwa Kebakaran Depo Pertamina Pelumpang Bertambah. (2023). https://bit.ly/KebakaranPertaminaPelumpang

The following is the victim's DNA **(Sample A)** which will be aligned with the DNA of the next of kin or the DNA left on the victim's toothbrush or hair **(Sample B)**.

Sample A

>A1
CGCAGAAGCTGCTCGTGTCAAATTAAGAGAAACGCACTGATGTTAAGCAT

>A2
CACACCCGCGGTGACTTGCACATGCGATTGCTCCCTTAAGGTCTATCTCC

>A3
GAGCAAGTACAGCAAGTGTGGTCGCAAGGACCTACCCCCGCGTATCGGCA

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>A4
CACACCCGCGGTGACTTGCACATGCGATTGCTCCCTTAAGGTCTATCTCC

>A5
ATGGGGGAAGGAACCGCCAGGCCAACGGTTTTTTCGGTGAGTTCACATTG

>A6
TCGGTGACAAACCCAGACTTCATCGTACGACCATTTTGAGTTGCAGAAGC

>A7
TTACCTAGCCGATCAGCATGAGAACGGGAAAATAGCCCACGGAGGCTACT

Question, from the DNA samples presented, is there the same DNA?

Sample B
>B1
CACACCCGCGGTGACTTGCACATGCGATTGCTCCCTTAAGGTCTATCTCC

>B2
CGCAGAAGCTGCTCGTGTCAAATTAAGAGAAACGCACTGATGTTAAGCAT

>B3
AGCCAAGTACAGCAAGTGTGGTCGCAAGGACCTACCCCCGCGTATCGGAG

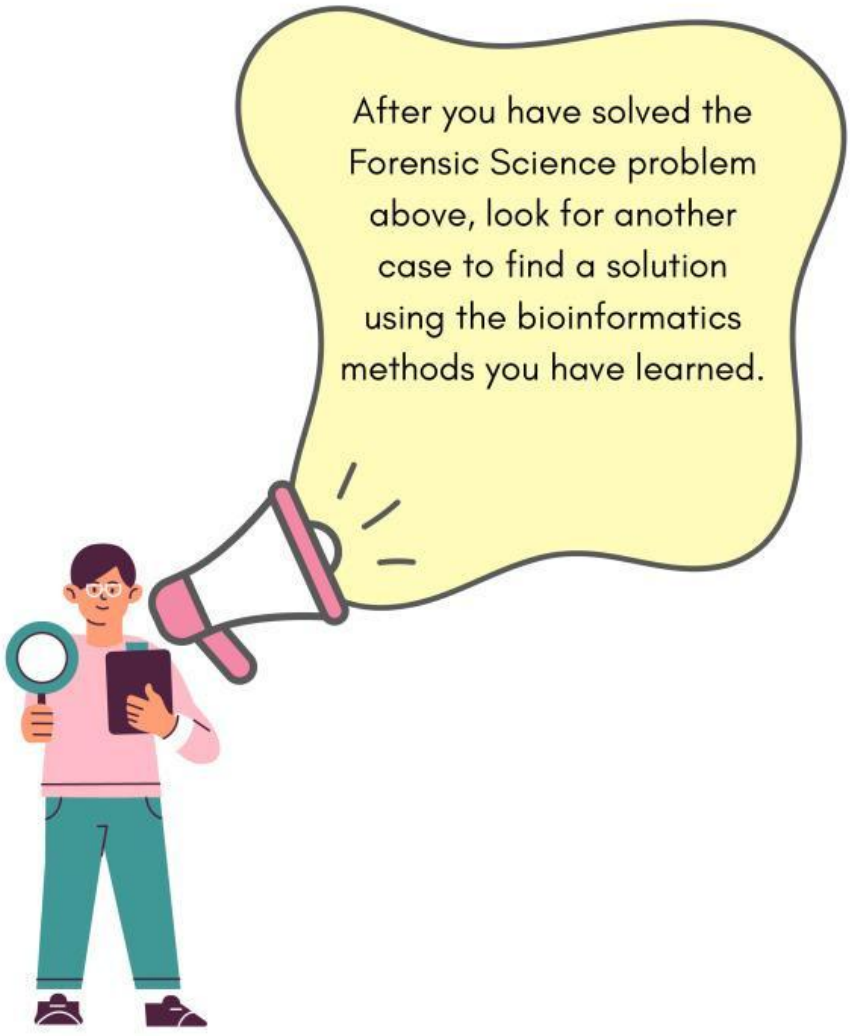
>B4
TCGGTGACAAACCCAGACTTCATCGTACGACCATTTTGAGTTGCAGAAAT

>B5
TTACCTAGCCGATCAGCATGAGAACGGGAAAATAGCCCACGGAGGCTACT

>B6
ACACAGGAAGGAACCGCCAGGCCAACGGTTTTTTCGGTGAGTTCAACCTG

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1. Using Manually
   a. Write back the result of DNA Sequence
   b. Look for DNA similarities in the DNA sequence in each sample
   c. Determine Sample victims and Relatives of victims who have similar DNA samples



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Please answer the questions below again

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Let's look at your answers after doing the activities in this lesson. If your answers change, become more detailed and better than before, congratulations! Your understanding is improving. However, if your answers after these activities remain the same, don't worry, please study again and consult your teacher.

LIVEWORKSHEETS