



# Mind Control

NAME: .....

CLASS: .....

DATE: .....



## Basic

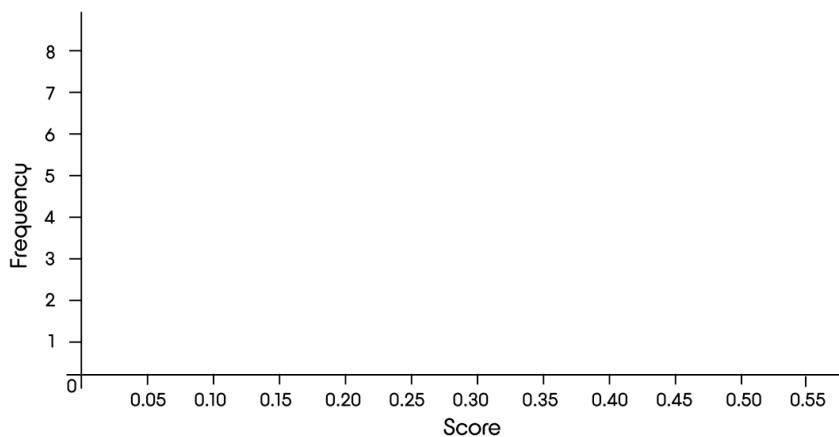
1) As part of a science experiment, a student measured the reaction times of 30 students. These are given below correct to the nearest hundredth of a second. The experiment took place at 9am.

0.32	0.44	0.31	0.47	0.29	0.41	0.45	0.28	0.19	0.17
0.33	0.46	0.42	0.33	0.22	0.49	0.34	0.16	0.44	0.35
0.25	0.37	0.41	0.40	0.28	0.37	0.41	0.15	0.24	0.23

a) Use the above information to complete the tally chart below.

Reaction times (s)	Tally	Frequency
$0.15 \leq t < 0.20$		
$0.20 \leq t < 0.25$		
$0.25 \leq t < 0.30$		
$0.30 \leq t < 0.35$		
$0.35 \leq t < 0.40$		
$0.40 \leq t < 0.45$		
$0.45 \leq t < 0.50$		

b) Draw a histogram to present this information.





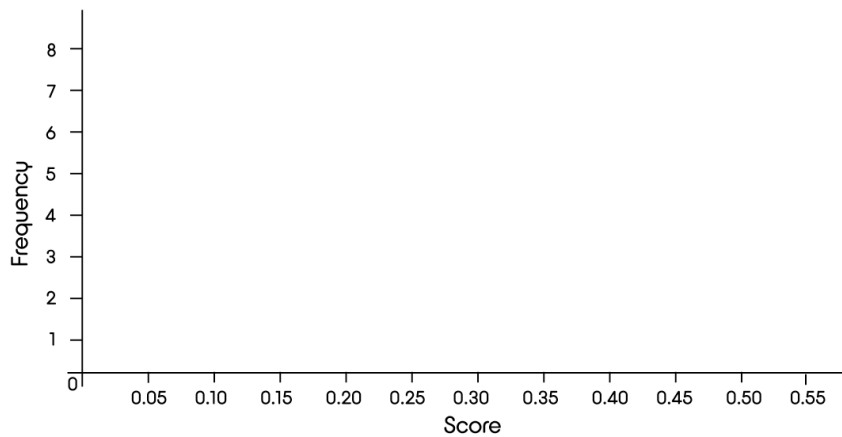
# Mind Control

## Basic

c) The same experiment was repeated at 4pm on the same day with the same 30 students. Their times are given below correct to the nearest hundredth of a second.

0.34	0.27	0.38	0.53	0.30	0.40	0.49	0.33	0.19	0.18
0.27	0.51	0.45	0.31	0.22	0.48	0.41	0.22	0.46	0.35
0.25	0.32	0.46	0.44	0.25	0.41	0.41	0.19	0.41	0.33

Using a similar tally chart to that above represent this second part of the experiment in a histogram.



d) Discuss any differences in the results from the two parts of the experiment.



# Mind Control

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## Core

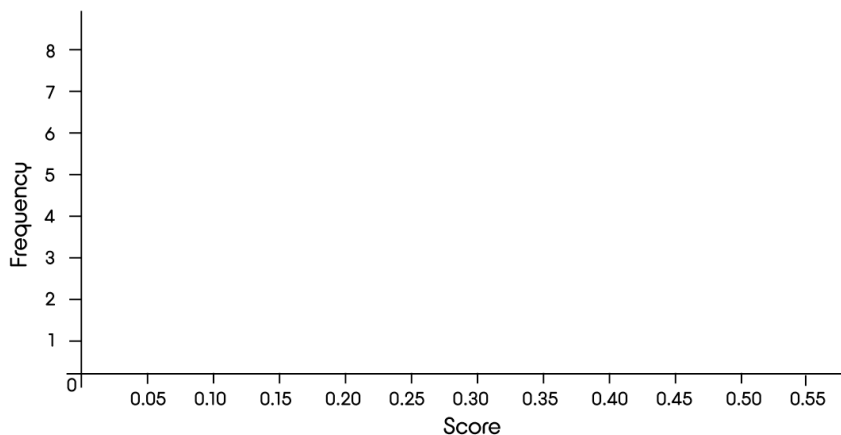
1) As part of a science experiment, a student measured the reaction times of 30 students. These are given below correct to the nearest hundredth of a second. The experiment took place at 9am.

0.32	0.44	0.31	0.47	0.29	0.41	0.45	0.28	0.19	0.17
0.33	0.46	0.42	0.33	0.22	0.49	0.34	0.16	0.44	0.35
0.25	0.37	0.41	0.40	0.28	0.37	0.41	0.15	0.24	0.23

a) Use the above information to complete the tally chart below.

Reaction times (s)	Tally	Frequency
$0.15 \leq t < 0.20$		
$0.20 \leq t < 0.25$		
$0.25 \leq t < 0.30$		
$0.30 \leq t < 0.35$		
$0.35 \leq t < 0.40$		
$0.40 \leq t < 0.45$		
$0.45 \leq t < 0.50$		

b) Draw a histogram to present this information.





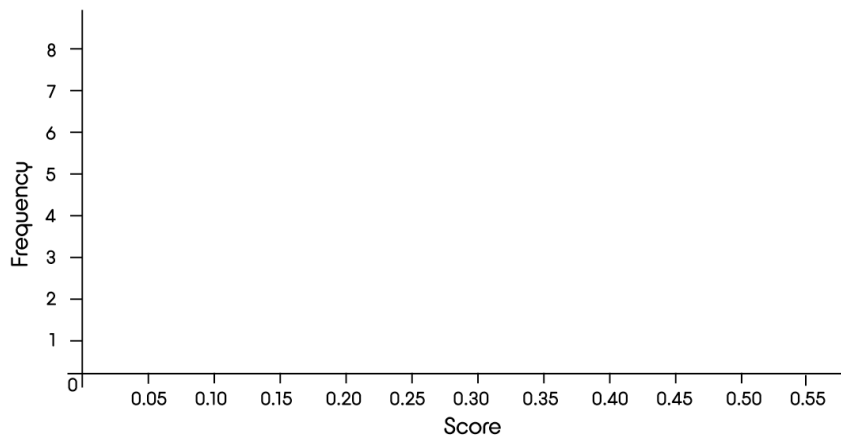
# Mind Control

## Core

The same experiment was repeated at 4pm on the same day with the same 30 students. Their times are given below correct to the nearest hundredth of a second.

0.34	0.27	0.38	0.53	0.30	0.40	0.49	0.33	0.19	0.18
0.27	0.51	0.45	0.31	0.22	0.48	0.41	0.22	0.46	0.35
0.25	0.32	0.46	0.44	0.25	0.41	0.41	0.19	0.41	0.33

c) Using a similar tally chart to that above represent this second part of the experiment in a histogram.



d) Discuss any differences in the results from the two parts of the experiment.



# Mind Control

## Core

2) A company wishes to set up a health and safety forum, which is to consist of 20 staff members. To keep the forum representative of all staff, numbers from each of the areas listed were calculated using a stratified sample technique.

How many of each type of employee should be in the forum?

	Number Employed	Forum
Senior Managers	8	
Supervisors	19	
Administrators	10	
Manual Staff	150	
Delivery Staff	13	

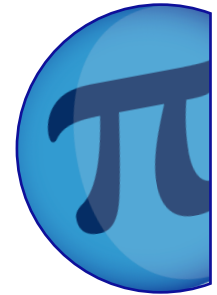


# Mind Control

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## Advanced

1) A company wishes to set up a health and safety forum, which is to consist of 20 staff members. To keep the forum representative of all staff, numbers from each of the areas listed were calculated using a stratified sample technique.

How many of each type of employee should be in the forum?

	Number Employed	Forum
Senior Managers	8	
Supervisors	19	
Administrators	10	
Manual Staff	150	
Delivery Staff	13	



# Mind Control

## Advanced

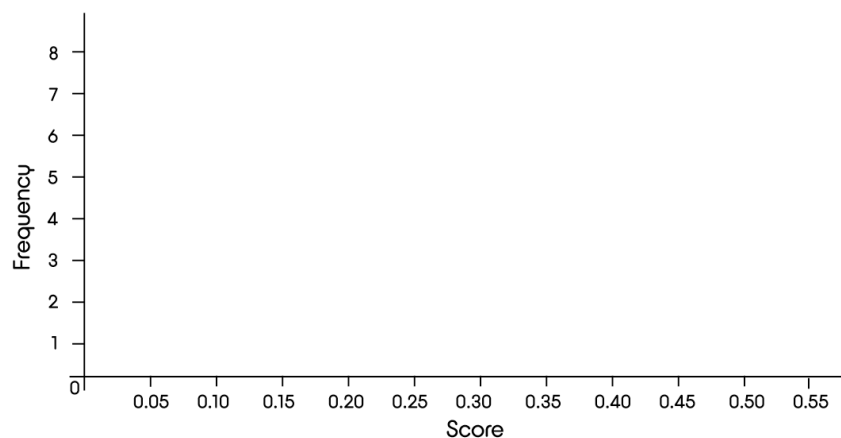
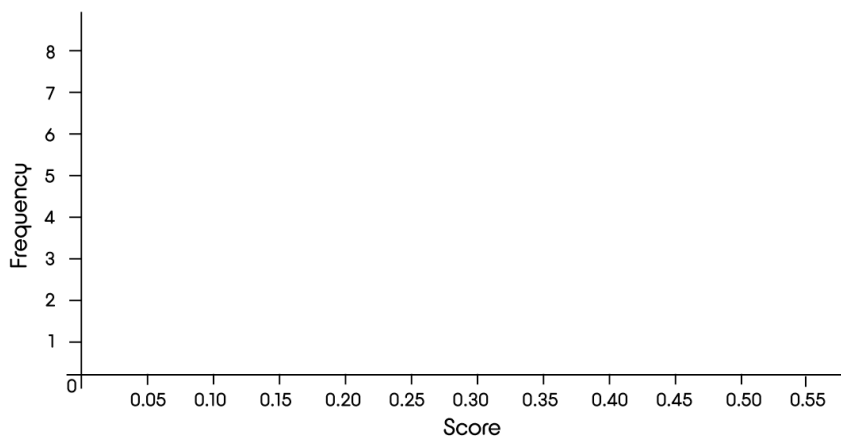
2) As part of a science experiment, a student measured the reaction times of 30 students. These are given below correct to the nearest hundredth of a second. The experiment took place at 9am.

0.32	0.44	0.31	0.47	0.29	0.41	0.45	0.28	0.19	0.17
0.33	0.46	0.42	0.33	0.22	0.49	0.34	0.16	0.44	0.35
0.25	0.37	0.41	0.40	0.28	0.37	0.41	0.15	0.24	0.23

The same experiment was repeated at 4pm on the same day with 20 different students. Their times are given below correct to the nearest hundredth of a second.

0.34	0.27	0.38	0.53	0.30	0.40	0.49	0.33	0.19	0.18
0.27	0.51	0.45	0.31	0.22	0.48	0.41	0.22	0.46	0.35

a) Draw a frequency polygon of both sets of information.



b) Discuss your findings and any shortcomings with regard to the experiment.



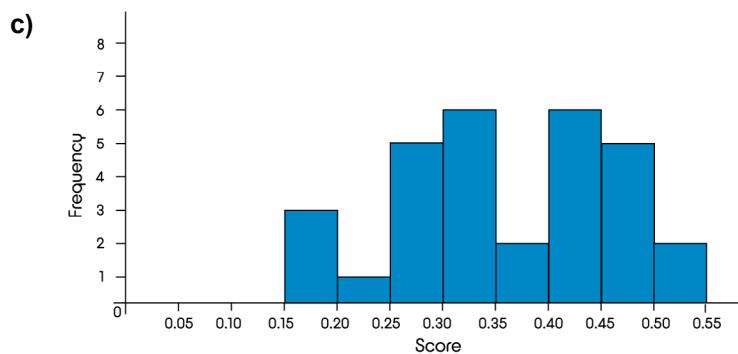
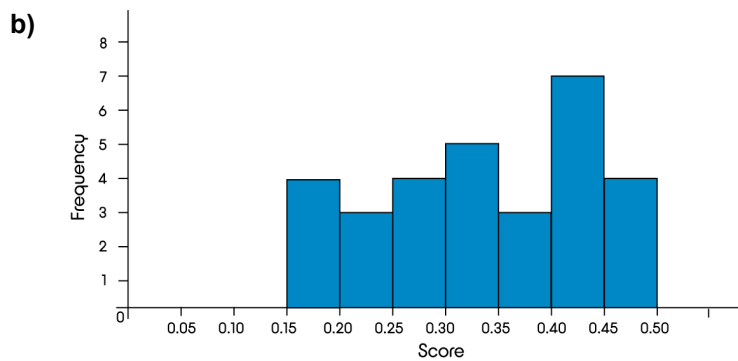
# Mind Control

## ANSWERS

### Basic

1) a)

Reaction times (s)	Tally	Frequency
$0.15 \leq t < 0.20$	IIII	4
$0.20 \leq t < 0.25$	III	3
$0.25 \leq t < 0.30$	IIII	4
$0.30 \leq t < 0.35$	IIII	5
$0.35 \leq t < 0.40$	III	3
$0.40 \leq t < 0.45$	IIII	7
$0.45 \leq t < 0.50$	IIII	4





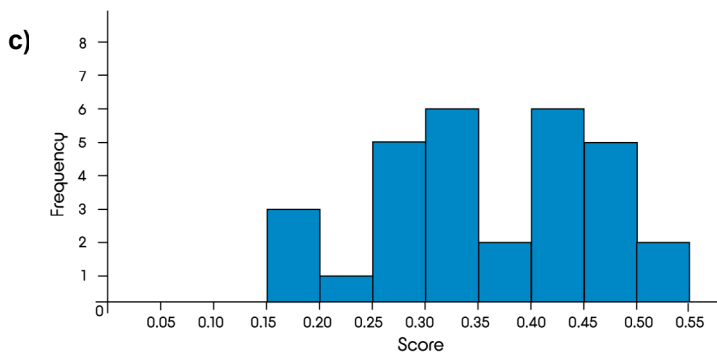
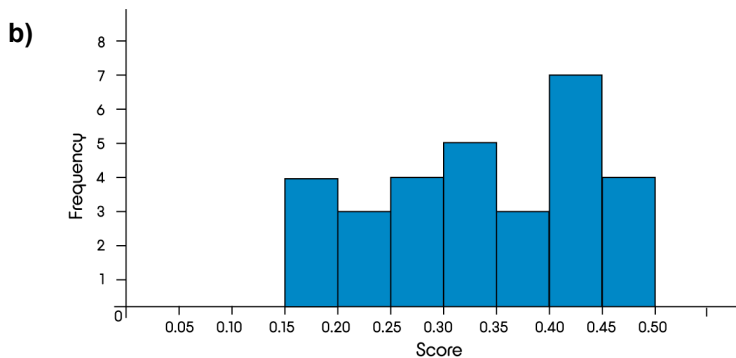


## ANSWERS

### Core

1) a)

Reaction times (s)	Tally	Frequency
$0.15 \leq t < 0.20$	IIII	4
$0.20 \leq t < 0.25$	III	3
$0.25 \leq t < 0.30$	IIII	4
$0.30 \leq t < 0.35$	IIII	5
$0.35 \leq t < 0.40$	III	3
$0.40 \leq t < 0.45$	IIIIII	7
$0.45 \leq t < 0.50$	IIII	4



2)

	Number Employed	Forum
Senior Managers	8	1
Supervisors	19	2
Administrators	10	1
Manual Staff	150	15
Delivery Staff	13	1



# Mind Control

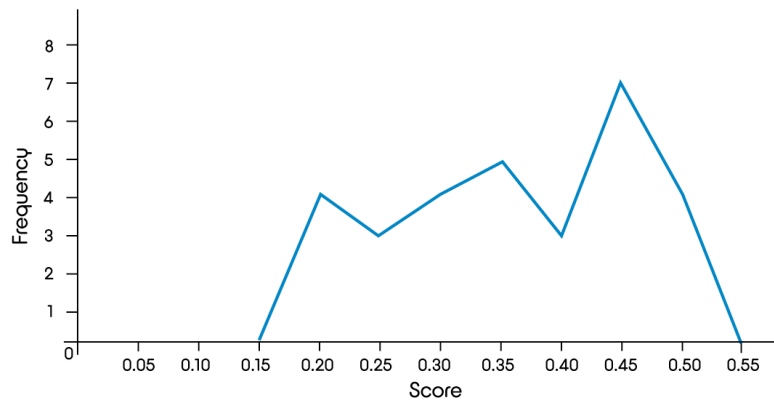
## ANSWERS

### Advanced

1)

	Number Employed	Forum
Senior Managers	8	1
Supervisors	19	2
Administrators	10	1
Manual Staff	150	15
Delivery Staff	13	1

### 2) Morning:



### Afternoon:

