

Skill

Group A - Tally marks

Work out the frequency represented by the following tally marks:

1)	II	2)	III	3)	
4)	,IHI	5)	JHK II	6)	JHT III
7)		8)		9)	JHT JHT IIII
10)		11)		12)	

Group B - Frequencies

Fill in the frequencies for the grouped frequency tables:

1)

Groups	Tally	Frequency
0 to 9		
10 to 19	JHT II	
20 to 29	Ш	

Groups	Tally	Frequency
0 to 9	Ш.	
10 to 19		
20 to 29	JHT II	

3)

Groups	Tally	Frequency
0 to 9	JHT	
10 to 19	JHT JHT	
20 to 29	₩T ₩T I	

4)

2)

Groups	Tally	Frequency
0 to 9		
10 to 19		
20 to 29	₩ II	
30 to 39	Ж	

5)

Groups	Tally	Frequency
0 to 9	III	
10 to 19	JHT JHT	
20 to 29	₩T ₩T I	
30 to 39	JHT II	

6)

Groups	Tally	Frequency
0 to 9	₩T II	
10 to 19	JHK IIII	
20 to 29	₩T ₩T IIII	
30 to 39	JHT JHT I	



Groups	Tally	Frequency
$0 < x \leq 10$		
$10 < x \leq 20$	JHT III	
$20 < x \leq 30$	Ж	

9)

Groups	Tally	Frequency
$0 < x \leq 10$	J#K II	
$10 < x \leq 20$	₩ ₩ II	
$20 < x \leq 30$		

8)

Groups	Tally	Frequency
$0 < x \leq 10$	Ш	
$10 < x \leq 20$	JHT II	
$20 < x \leq 30$	JHT I	

10)

Groups	Tally	Frequency
$0 < x \leq 10$	J₩T I	
$10 < x \leq 20$	J#K II	
$20 < x \leq 30$	Ж	
$30 < x \leq 40$		

11)

Groups	Tally	Frequency
$0 < x \leq 10$		
$10 < x \leq 20$	JHT I	
$20 < x \leq 30$	JHT JHT II	
$30 < x \leq 40$	₩T ₩T	

1	2)
T	Ζ)

Groups	Tally	Frequency
$0 < x \leq 10$	J₩T I	
$10 < x \leq 20$	THL THL	
$20 < x \leq 30$	₩T ₩T IIII	
$30 < x \leq 40$	JHT JHT I	

Group C - Classes

From the table identify the class (or classes) with the following frequencies:

1) 7

Groups	Tally	Frequency
0 to 9		
10 to 19	JHT II	
20 to 29	Ш.	

3) 7

Groups	Tally	Frequency
0 to 9	J#T	
10 to 19	₩ ₩ II	
20 to 29	₩ ₩ I	

2) 5

Groups	Tally	Frequency
0 to 9	Ш	
10 to 19	₩T ₩T I	
20 to 29	₩T II	

4) 4

Groups	Tally	Frequency
0 to 9	III	
10 to 19		
20 to 29	JHT II	
30 to 39	Ж	



5) 11

Groups	Tally	Frequency
0 to 9	III	
10 to 19	JHT JHT	
20 to 29	JHT JHT I	
30 to 39	₩T II	

7) 5

Groups	Tally	Frequency
$0 < x \leq 10$		
$10 < x \leq 20$	₩T III	
$20 < x \leq 30$	Ж	

9) 12

Groups	Tally	Frequency
$0 < x \leq 10$	JHT	
$10 < x \leq 20$	JHT JHT II	
$20 < x \leq 30$		

11) 10

Groups	Tally	Frequency
$0 < x \leq 10$	IIII	
$10 < x \leq 20$	₩T I	
$20 < x \leq 30$	JHT JHT	
$30 < x \leq 40$	Ш. Ш.	

6) Greater than 10

Groups	Tally	Frequency
0 to 9	JHT II	
10 to 19	JHT IIII	
20 to 29	JHT JHT IIII	
30 to 39	₩T ₩T I	

8) 6 or less

Groups	Tally	Frequency
$0 < x \leq 10$	Ж	
$10 < x \leq 20$	₩T II	
$20 < x \leq 30$	₩T I	

10) Less than 5

Groups	Tally	Frequency
$0 < x \leq 10$	₩T I	
$10 < x \leq 20$	₩ II	
$20 < x \leq 30$	Ж	
$30 < x \leq 40$		

12) 14

Groups	Tally	Frequency
$0 < x \leq 10$	THL I	
$10 < x \leq 20$	THL THL	
$20 < x \leq 30$	₩T ₩T IIII	
$30 < x \leq 40$	1.111 INT I	



Applied

1) (a) A class took a science test. Here are their scores:

11	14	9	12	8
17	16	8	6	10
5	19	15	13	9

Fill in the grouped frequency table:

Score	Tally	Frequency
1 to 5		
6 to 10		
11 to 15		
16 to 20		

- (b) A score of 11 or more is needed to pass the science test. What is the ratio of the number of people who fail to the number of people who pass?
- 2) (a) Sarah carries out a survey about the time that some students spend on their mobile phones a day. Here are the results:

35	55	32	46	40
50	48	60	78	19
35	43	20	82	85
26	70	65	28	45

Fill in the grouped frequency table:

Time (minutes)	Tally	Frequency
$0 \leq x < 25$		
$25 \leq x < 50$		
$50 \leq x < 75$		
$75 \leq x < 100$		

(b) What percentage of students are on their mobile phone for 75 minutes or more?



3) (a) Bryn carries out a survey about the lengths of cucumbers in the supermarket. Here are the results:

20.5	38.4	33.9	35.0	25.8
30.4	39.8	37.6	26.4	21.9
27.9	36.9	21.3	26.7	29.6
32.8	37.0	32.7	24.7	34.1

Fill in the grouped frequency table:

Length (L , cm)	Tally	Frequency
$20 \leq L < 25$		
$25 \leq L < 30$		
$30 \leq L < 35$		
$35 \leq L < 40$		

(b) What percentage of cucumbers are 25*cm* or longer?

4) Below is a set of 20 scores from a test.

11	31	55	38	7
32	26	40	13	25
27	44	17	46	37
24	35	37	28	45

Create a suitable grouped frequency table for these scores. The maximum mark is 60.



Grouped frequency table - Exam Questions

1) Adil carried out a survey to find the number of emails sent by 20 of his friends yesterday.

Here are the results:

4 35 28 17	22	27	32	11
	40 5	13	39	18
		12	42	25
	25	45	38	8

Complete the grouped frequency table:

Number of emails	Tally	Frequency
0 - 9		
10 - 19		
20 - 29		
30 - 39		
40 - 49		

(2 marks)



Grouped frequency table - Exam Questions

2) (a) Charlie asked 20 people how long in minutes they spent doing their English homework.

Here are their results.

58	19	30	25	37
27	25	35	45	37
48	42	30	49	28
35	14	20	32	37

Complete the grouped frequency table:

Time, t minutes	Tally	Frequency
$0 < t \leq 15$		
$15 < t \leq 30$		
$30 < t \leq 45$		
$45 < t \leq 60$		

(b) What percentage of people spent half an hour or less on English homework?

(2)

.....% (2) (4 marks)



Grouped frequency table - Exam Questions

3) (a) Roshan is surveying the heights of 20 tomato plants. She measures them to the nearest centimetre.

Here are the results in metres

1.26	1.42	1.75	1.03	1.28
1.15	1.28	1.09	1.80	1.59
1.92	1.44	1.38	1.55	1.62
1.64	1.79	1.91	1.73	1.52

Complete the grouped frequency table:

Height, h (m)	Tally	Frequency
$1.00 < h \leq 1.25$		
$1.25 < h \leq 1.50$		
$1.50 < h \leq 1.75$		
$1.75 < h \leq 2.00$		

(2)

(b) What percentage of tomato plants are more than 125 cm tall?

.....%

(4 marks)



	Question	Answer
	Skill Questions	
Group A	Work out the frequency represented by the following tally marks:	
	1)	1) 2
	2)	2) 3
	3)	3) 4
	⁴⁾	4) 5
	5) ∭ ∥	5) 7
	⁶⁾	6) 8
	⁷⁾	7) 10
	⁸⁾	8) 13
	⁹⁾	9) 14
	¹⁰⁾	10) 15
	¹¹⁾	11) 16
	¹²⁾	12) 18



Group P	Fill in the	e frequenc	ies for the			
Group B	frequenc	sy tables				
	11	ly lables.				
	LT)				`	1) 3, 7, 5
		Groups	Tally	Frequency		
		0 to 9			-	
		10 to 19	J#f		-	
		20 to 29	.₩ſ		J	21 5 11 7
	2)					
		Groups	Tally	Frequency		
		0 to 9	Ж			
		10 to 19	₩T ₩T I			
		20 to 29	JHT			
	3)					3) 7, 12, 11
		Groups	Tally	Frequency		
		0 to 9	JHK II			
		10 to 19	JHT JHT			
		20 to 29	₩T ₩T I			
	4)					4) 3, 4, 7, 5
		Groups	Tally	Frequency		
		0 to 9	III			
		10 to 19				
		20 to 29				
		30 to 39	.Hti			
	5)					5) 3, 12, 11, 7
		Groups	Tally	Frequency		
		0 to 9	III			
		10 to 19				
		20 to 29				
		30 to 39	JHT II			
	6)					\mathbf{C} 7 0 14 11
		Groups	Tally	Frequency		ןס ן /, 9, 14, 11
		0 to 9	J#T II			
		10 to 19	JHT III			
		20 to 29	JHT JHT IIII			
		30 to 39	₩T ₩T I			
	7)					7) 3, 9, 5
		Groups	Tally	Frequency		
		$0 < x \leq 10$	III			
		$10 < x \leq 20$	JHT IIII			
		$20 < x \leq 30$,IHI			



Group B contd	8)					8) 5, 7, 6
		Groups	Tally	Frequency		
		$0 < x \leq 10$	₩ĭ			
		$10 < x \leq 20$	JHT II			
		$20 < x \leq 30$	JHT I		J	
	9)					9) 7, 12, 9
		Groups	Tally	Frequency		
		$0 < x \leq 10$	JHT II]	
		$10 < x \leq 20$	JHT JHT II			
		$20 < x \leq 30$	JHT 1111		J	
	10)					10) 6, 7, 5, 4
		Groups	Tally	Frequency		
		$0 < x \leq 10$, IHT I			
		$10 < x \leq 20$	J#T			
		$20 < x \leq 30$.₩ĭ			
		$30 < x \leq 40$	IIII		J	11) 4 6 12 10
	11)					11 , 1, 0, 12, 10
		Groups	Tally	Frequency]	
		$0 < x \leq 10$	IIII			
		$10 < x \leq 20$.₩ĭ I			
		$20 < x \leq 30$	JHT JHT II			
		$30 < x \leq 40$	JHT JHT		J	
	12)					12) 6, 10, 14, 11
		Groups	Tally	Frequency		
		$0 < x \leq 10$	JHT I			
		$10 < x \leq 20$	₩T₩T			
		$20 < x \leq 30$	JHT JHT III		1	
		$30 < x \le 40$			J	



Group C	From th	ne table ic	lentify the	class (or		
	classes) with the	following	a frequenc	ies:	
	1) 7	,		,		1) 10 to 10
	1 , <i>i</i>)	1) 10 (0 19
		Groups	Tally	Frequency		
		0 to 9	III			
		10 to 19	JHT II			
		20 to 29	Ж			
	2) 5					
		Groups	Tally	Frequency		2) 0 to 9
		0 to 9	,IHI			
		10 to 19	₩T₩T I			
		20 to 29	JHT II			
	3) 7					3) 0 to 0
		Groups	Tally	Frequency		5,010 9
		0 to 9	JHK II			
		10 to 19	JHT JHT II			
		20 to 29	HI HI I			
					, ,	
	4) 4					
		Groups	Tally	Frequency		4) 10 - 19
		0 to 9				
		10 to 19				
		20 to 29				
		30 to 39	, HI			
	5) 11					
	JJJJJ			_)	E) 20 20
		Groups	Tally	Frequency		5,20 - 29
		0 to 9	וו וערוערוו			
		20 to 29	וואוואו וארוארו			
		30 to 39	ult II			
)	
	6) Gre	ater than	10			6) 20 - 29 and 30 - 39
		Groups	Tally	Frequency		
		0 to 9	JHT II			
		10 to 19	₩ III			
		20 to 29	W W W			
		30 to 39				



Group C contd	7) 5				7) $20 \le x < 30$
		Groups	Tally	Frequency	
		$0 < x \leq 10$			
		$10 < x \leq 20$	₩r IIII		
		$20 < x \leq 30$	₩r		
	8) 6 o	r less			8) $0 \le x < 10$ and
		Groups	Tally	Frequency	$20 \le x < 30$
		$0 < x \leq 10$	Ж		
		$10 < x \leq 20$	₩T II		
		$20 < x \leq 30$	Ш.		
	9) 12				9) $10 \le x < 20$
		Groups	Tally	Frequency	
		$0 < x \leq 10$	JHK II		
		$10 < x \leq 20$	JHT JHT		
		$20 < x \leq 30$	JHK IIII		
	10) Le	ess than 5			10) $30 < x \le 40$
		Groups	Tally	Frequency	
		$0 < x \le 10$			
		$10 < x \le 20$ $20 < x \le 30$,1411 II 1147		
		$20 < x \leq 30$ $30 < x \leq 40$			
			I		
	11) 10	C			11) 30 $< r < 40$
		Groups	Tally	Frequency	11 30 12
		$0 < x \leq 10$			
		$10 < x \leq 20$			
		$20 < x \le 30$ $30 < x \le 40$, 1411, 1411, 11 1147, 1147		
		4			
	12) 14	¥			12) $20 < x \le 30$
		Groups	Tally	Frequency	
		$\begin{array}{c c} 0 < x \ge 10 \\ \hline 10 < x < 20 \end{array}$	un i Un un		
		$20 < x \leq 30$			
		$30 < x \leq 40$	₩T₩T I		
	1				



	Q	uest	ion					An	iswer		
	A	oplie	d Questions	;							
1)	a)	A cl Her	ass took a s e are their s	cience t cores:	est.			a)	Score	Tally	Frequency
		11	11	9	12	8			6 to 10	ur i	6
		11	14)	14	0			11 to 15	JHT .	5
		17	16	8	6	10			16 to 20		3
		5	19	15	13	9					
		Fill	in the freque	ency tab	le:						
			Score	Tally		Frequency					
			1 to 5								
			6 to 10								
			11 to 15								
			16 to 20				J				
		the Wh who pase	science test at is the rati o fail to the r s?	o of the າumber	nun of p	nber of peop eople who	ole				
2)	a)	Sara	ah carries ou	it a surv	ey a	bout the tin	ne	a)	Time (minutes)	Tally	Frequency
		that	some stude	ents spe	nd c	on their mob	oile		$0 \leq x < 25$		2
		prio Her	nes a uay. e are the rec	ulte					$25 \le x < 50$		10
		25		22	10	40			$50 \le x < 75$ $75 \le x \le 100$		5
		35	55	32	46	40			10 2 2 < 100	111	
		50	48	60	78	19					
		35	43	20	82	85					
		26	70	65	28	45					
		Fill	in the freque	ency tab	le:						
			Time (minutes)	Tally		Frequency					
			$0 \leq x < 25$								
			$25 \leq x < 50$								
			$50 \leq x < 75$								
			$75 \leq x < 100$				J				



	b)	What p mobile	percenta phone f	ge of stud or 75 minu	ents Ites (are o or mo	on their ore?		b) ·	3 20	-× 100	= 15%	
3)	a)	Bryn ca of cucu Here ai	arries ou mbers ir re the re	t a survey I the supe sults:	aboı rmar	ut the ket.	e lengths		a)		ength (L, cm) $20 \le L < 25$ $25 \le L < 30$ $30 \le L < 35$	Tally IIII IIII IIII	Frequency 4 5 5
		20.5	38.4	33.9	35	5.0	.0 25.8				$35 \leq L < 40$, III.	6
		30.4	39.8	37.6	37.6 26		.4 21.9						
		27.9	36.9	21.3	26	5.7	29.6						
		32.8	37.0	32.7	32.7 24.7 34.1								
		Fill in t	he frequ	ency table	:								
		Lengt	th (L , cm)	Tally Frequency									
		20 ≤	$\leq L < 25$										
		$25 \leq$	$\leq L < 30$										
		30 <	$\leq L < 35$										
		$35 \leq$	$\leq L < 40$										
	b)	What p 25 <i>cm</i> o	percenta or longer	ge of cucu ?	mbe	rs ar	e		b) ·	<u>16</u> 20	× 100 =	= 80%	
4)		Below	is a set o	of 20 score	es fro	om a	test.			Ex	ample so	olution:	
		11	21		-	7					Scores	Tally	Frequency
		11	51	55 50	/						1 - 10		1
		32	26	40 13	2	5					21 - 30	Ш. Ш.	5
		27	4.4	17 16	3	7					31 - 40	JHT	7
		27	77	17 40	5	/					41 - 50		3
		24	35	37 28	4	5				L	51 - 60	I	
		Create these s	a suitab cores. T	le grouped he maximi	d freo um m	quen nark	icy table fo is 60.	or					



Grouped frequency table - Mark Scheme

	Ques	tion					Ans	wer			
	Exam	Quest	tions								
1)	Adil ca	rried o	out a surv	ey to	o find	the		Number of emails	Tally	Frequency	
	friends	01 em	dav	Uy Z	20 01 1	115		0 - 9		3	
	Here ar	e the r	uay. esults					10 - 19	Ш	5	
			07	22	1	1		20 - 29	₩ĭ	5	
	4	ZZ	27	32	1	1		30 - 39		4	
	35	40	13	39	1	8		40 - 49		3	
	28	5	12	42	2	5					
	17	25	45	38	8			For at least one For all frequence	correct tally o	r frequency	$\begin{pmatrix} (1) \\ (1) \end{pmatrix}$
	Completer table:	ete the	grouped	freq	uency			1			
	Numbe	r of emails	Tally		Frequency						
	(0 - 9									
	20	10 - 19 20 - 29									
	30	30 - 39									
	40) - 49									
2) (a)	Charlie	asked	20 peop	le ho	ow lor	ıg in		Time, t minutes	Tally	Frequency	
	minutes	s they s	spent doi	ing tł	neir			$0 < t \leq 25$	1	1	
	English	home	work.					$15 < t \leq 30$	UHYT III	8	
	11	- 41 :						- 30 < t < 45		8	
	Here ar	e their	results.	25		27		$45 < t \le 60$		3	
	27	25	30	45	5	37 37		40 < 0 2 00	- 111		
	48	42	30	49)	28			11	C	
	35	14	20	<u> </u>	2	37		For at least one	correct tally o	r frequency	(1)
	table:	ete the	grouped	ireq	uency			For an inequence	cles collect		(1)
	Time, t m	ninutes	Tally		Freque	ency					
	0 < t s	≤ 15									
	15 < t	≤ 30									
	30 < t	≤ 45									
	45 < t	≤ 60									
(b)) What plan hour	ercenta or les	age of pe s on Eng	ople lish	spent	half	(b)	$\frac{1+8}{20} \times 100$			(1)
	homew	ork?					:	= 45%			(1)



Grouped frequency table - Mark Scheme

3)	(a)	Roshan is sur	veying t	the heig	tts of	(a)	Height, h (m)	Tally	Frequency	
		20 tomato pi	ants.	thana	oract		$1.00 < h \leq 1.25$	III	3	
		centimetre.	s them to) the he	arest		$1.25 < h \leq 1.50$	JHT I	6	
							$1.50 < h \leq 1.75$	JHT ∥	7	
		Here are the 1	esults ir	n metres	5		$1.75 < h \leq 2.00$		4	
		1.26 1.42	1.75	1.03	1.28					
		1.15 1.28	1.09	1.80	1.59	I I	For at least one	correct tally or	frequency	m
		1.92 1.44	1.38	1.55	1.62		For all frequence	ies correct	nequency	(1)
		1.64 1.79 1.91 1.73 1.52					or an inequene			(1)
		Complete the table: Height, h (m) $1.00 < h \le 1.25$ $1.25 < h \le 1.50$ $1.50 < h \le 1.75$ $1.75 < h \le 2.00$	grouped Tally	d freque	equency					
	(b)	What percent more than 12	age of to 5 <i>cm</i> tal	omato p 1?	lants are	(b) -	$\frac{6+7+4}{20} \times 100$			(1)
						= 85%				

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