

Frequency Polygon - Worksheet

Skill

Group A - Class widths of 10

For these grouped frequency tables, draw a frequency polygon:

1)

Values, x	Frequency
$0 < x \leq 10$	3
$10 < x \leq 20$	7
$20 < x \leq 30$	6
$30 < x \leq 40$	2

2)

Values, x	Frequency
$0 < x \leq 10$	2
$10 < x \leq 20$	10
$20 < x \leq 30$	5
$30 < x \leq 40$	3

3)

Values, x	Frequency
$0 < x \leq 10$	4
$10 < x \leq 20$	6
$20 < x \leq 30$	9
$30 < x \leq 40$	5

4)

Values, x	Frequency
$0 < x \leq 10$	3
$10 < x \leq 20$	8
$20 < x \leq 30$	10
$30 < x \leq 40$	2

Group B - Class widths of 100

For these grouped frequency tables, draw a frequency polygon:

1)

Values, x	Frequency
$0 \leq x < 100$	3
$100 \leq x < 200$	7
$200 \leq x < 300$	6
$300 \leq x < 400$	2

2)

Values, x	Frequency
$0 \leq x < 100$	2
$100 \leq x < 200$	10
$200 \leq x < 300$	5
$300 \leq x < 400$	3

3)

Values, x	Frequency
$0 \leq x < 100$	4
$100 \leq x < 200$	6
$200 \leq x < 300$	9
$300 \leq x < 400$	5

4)

Values, x	Frequency
$0 \leq x < 100$	3
$100 \leq x < 200$	8
$200 \leq x < 300$	10
$300 \leq x < 400$	2

Frequency Polygon - Worksheet

Group C - Class widths of 20

For these grouped frequency tables, draw a frequency polygon:

1)

Values, x	Frequency
$0 \leq x < 20$	3
$20 \leq x < 40$	7
$40 \leq x < 60$	6
$60 \leq x < 80$	2

2)

Values, x	Frequency
$0 \leq x < 20$	2
$20 \leq x < 40$	10
$40 \leq x < 60$	5
$60 \leq x < 80$	3

3)

Values, x	Frequency
$0 \leq x < 20$	4
$20 \leq x < 40$	6
$40 \leq x < 60$	9
$60 \leq x < 80$	5

4)

Values, x	Frequency
$0 \leq x < 20$	3
$20 \leq x < 40$	8
$40 \leq x < 60$	10
$60 \leq x < 80$	2

Frequency Polygon - Worksheet

Applied

- 1) A farmer keeps a record of the yields from his blueberry plants.
Here are the results:

Weights, w (g)	Frequency
$0 < h \leq 200$	1
$200 < h \leq 400$	6
$400 < h \leq 600$	17
$600 < h \leq 800$	18
$800 < h \leq 1000$	11

- (a) Draw a frequency polygon for the results.
- (b) How many blueberry plants did the farmer measure the yields for?
- 2) Sam measures the heights of some plants.
Here are the results:

Heights, h (cm)	Frequency
$0 < h \leq 50$	3
$50 < h \leq 100$	5
$100 < h \leq 150$	10
$150 < h \leq 200$	17
$200 < h \leq 250$	6

- (a) Draw a frequency polygon for the results
- (b) How many plants were less than or equal to 1m tall?

Frequency Polygon - Worksheet

- 3) Here is a frequency polygon showing scores in a test.



- (a) Complete the grouped frequency table:

Scores, x	Frequency
$0 \leq x < 20$	
$20 \leq x < 40$	
$40 \leq x < 60$	
$60 \leq x < 80$	
$80 \leq x < 100$	

- (b) The pass mark was 40.
How many people passed the test?

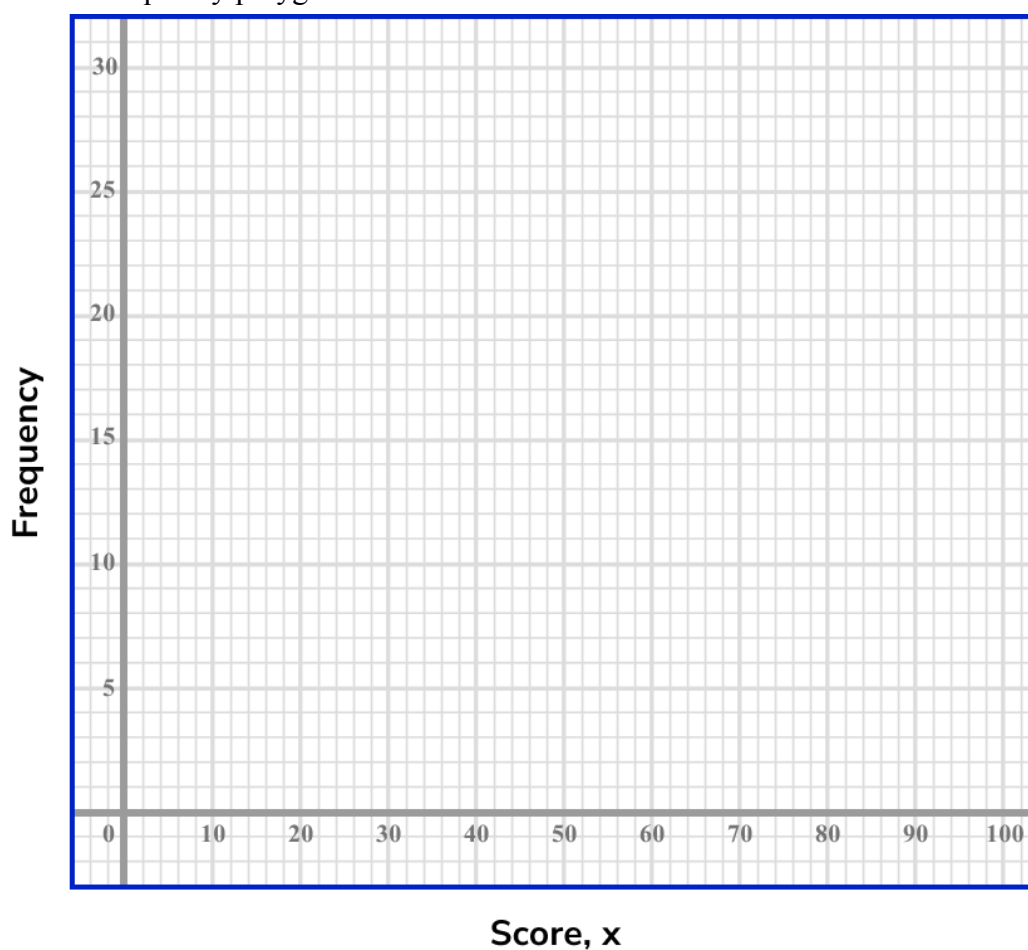
Frequency Polygon - Exam Questions

- 1) The test scores of 80 students are recorded.

The frequency table shows the information.

Scores, x	Frequency
$0 \leq x < 20$	7
$20 \leq x < 40$	13
$40 \leq x < 60$	27
$60 \leq x < 80$	19
$80 \leq x < 100$	14

Draw a frequency polygon for the information in the table.



(2 marks)

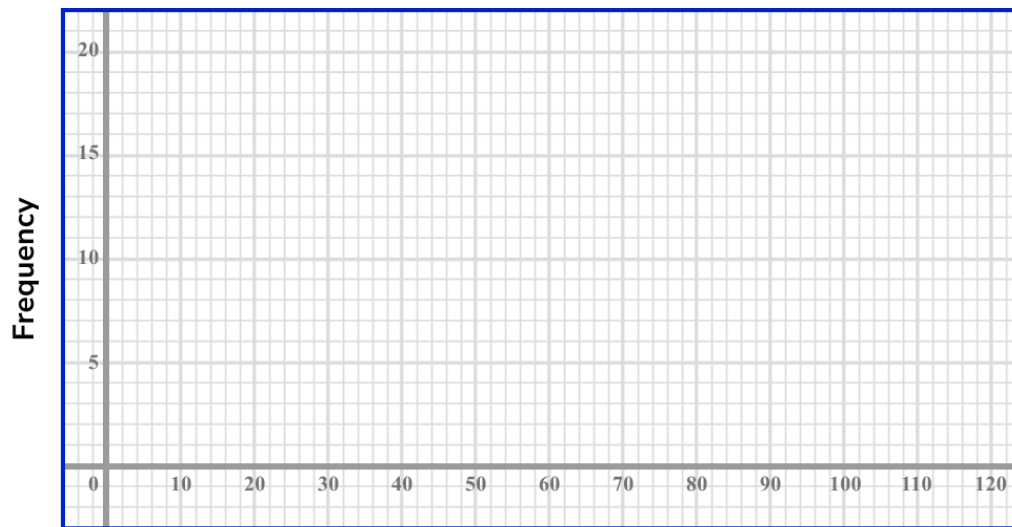
Frequency Polygon - Exam Questions

- 2) The speeds of 50 vehicles are recorded.

The frequency table shows the information.

Speed, v (kmph)	Frequency
$0 < v \leq 20$	1
$20 < v \leq 40$	9
$40 < v \leq 60$	8
$60 < v \leq 80$	17
$80 < v \leq 100$	13
$100 < v \leq 120$	2

Draw a frequency polygon for the information in the table.



Speeds, v (kmph)

(2 marks)

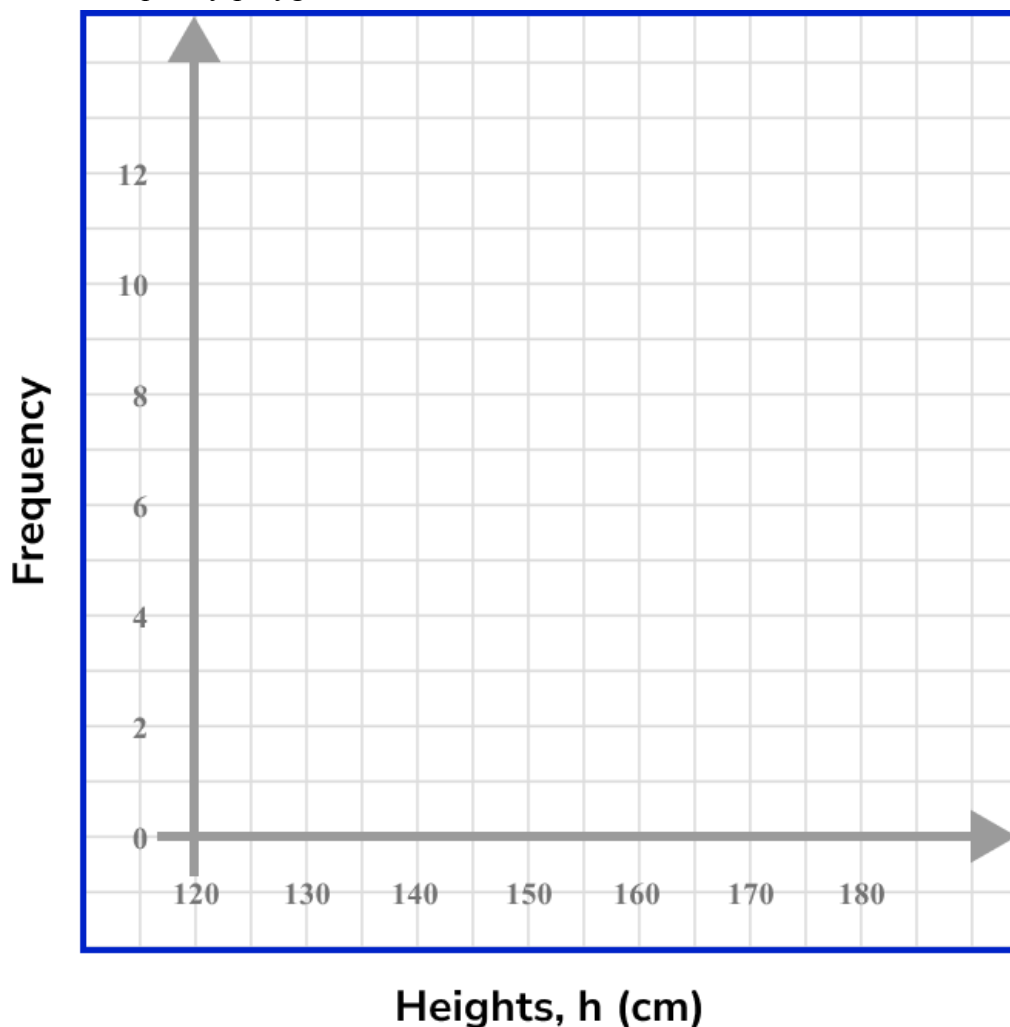
Frequency Polygon - Exam Questions

- 3) The heights of 30 students are measured.

The frequency table shows the information.

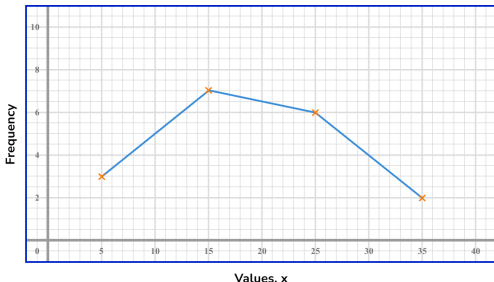
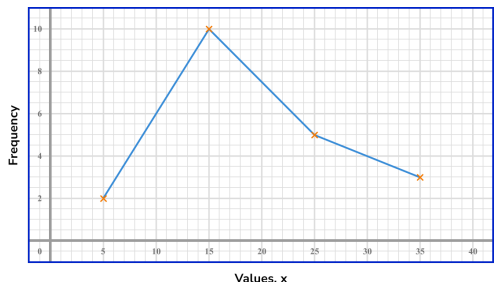
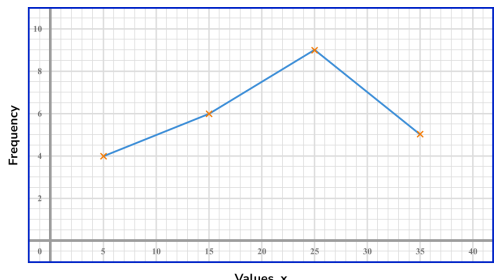
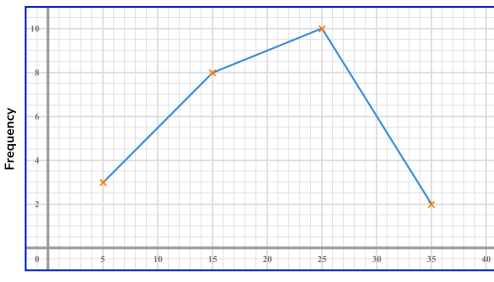
Heights, h (cm)	Frequency
$120 < h \leq 130$	1
$130 < h \leq 140$	5
$140 < h \leq 150$	10
$150 < h \leq 160$	9
$160 < h \leq 170$	3

Draw a frequency polygon for the information in the table.



(2 marks)

Frequency Polygon - Answers

	Question	Answer										
	Skill Questions											
Group A	For these grouped frequency tables, draw a frequency polygon:											
	1)	1)										
	<table><thead><tr><th>Values, x</th><th>Frequency</th></tr></thead><tbody><tr><td>$0 < x \leq 10$</td><td>3</td></tr><tr><td>$10 < x \leq 20$</td><td>7</td></tr><tr><td>$20 < x \leq 30$</td><td>6</td></tr><tr><td>$30 < x \leq 40$</td><td>2</td></tr></tbody></table>	Values, x	Frequency	$0 < x \leq 10$	3	$10 < x \leq 20$	7	$20 < x \leq 30$	6	$30 < x \leq 40$	2	
	Values, x	Frequency										
	$0 < x \leq 10$	3										
$10 < x \leq 20$	7											
$20 < x \leq 30$	6											
$30 < x \leq 40$	2											
2)	2)											
<table><thead><tr><th>Values, x</th><th>Frequency</th></tr></thead><tbody><tr><td>$0 < x \leq 10$</td><td>2</td></tr><tr><td>$10 < x \leq 20$</td><td>10</td></tr><tr><td>$20 < x \leq 30$</td><td>5</td></tr><tr><td>$30 < x \leq 40$</td><td>3</td></tr></tbody></table>	Values, x	Frequency	$0 < x \leq 10$	2	$10 < x \leq 20$	10	$20 < x \leq 30$	5	$30 < x \leq 40$	3		
Values, x	Frequency											
$0 < x \leq 10$	2											
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$20 < x \leq 30$	5											
$30 < x \leq 40$	3											
3)	3)											
<table><thead><tr><th>Values, x</th><th>Frequency</th></tr></thead><tbody><tr><td>$0 < x \leq 10$</td><td>4</td></tr><tr><td>$10 < x \leq 20$</td><td>6</td></tr><tr><td>$20 < x \leq 30$</td><td>9</td></tr><tr><td>$30 < x \leq 40$</td><td>5</td></tr></tbody></table>	Values, x	Frequency	$0 < x \leq 10$	4	$10 < x \leq 20$	6	$20 < x \leq 30$	9	$30 < x \leq 40$	5		
Values, x	Frequency											
$0 < x \leq 10$	4											
$10 < x \leq 20$	6											
$20 < x \leq 30$	9											
$30 < x \leq 40$	5											
4)	4)											
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Values, x	Frequency											
$0 < x \leq 10$	3											
$10 < x \leq 20$	8											
$20 < x \leq 30$	10											
$30 < x \leq 40$	2											

Frequency Polygon - Answers

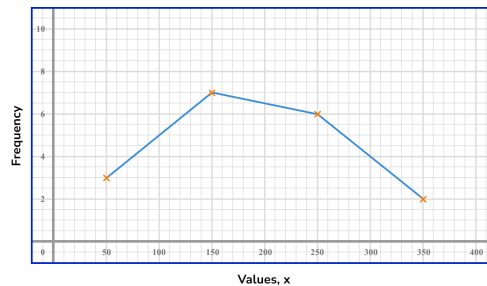
Group B

For these grouped frequency tables, draw a frequency polygon:

1)

Values, x	Frequency
$0 \leq x < 100$	3
$100 \leq x < 200$	7
$200 \leq x < 300$	6
$300 \leq x < 400$	2

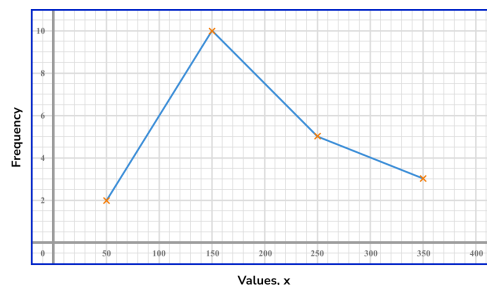
1)



2)

Values, x	Frequency
$0 \leq x < 100$	2
$100 \leq x < 200$	10
$200 \leq x < 300$	5
$300 \leq x < 400$	3

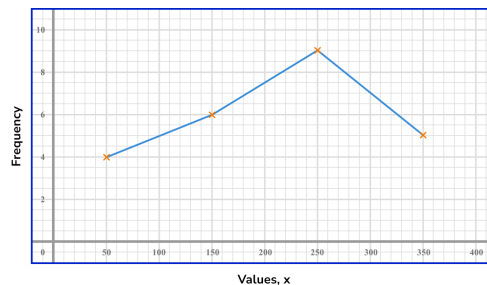
2)



3)

Values, x	Frequency
$0 \leq x < 100$	4
$100 \leq x < 200$	6
$200 \leq x < 300$	9
$300 \leq x < 400$	5

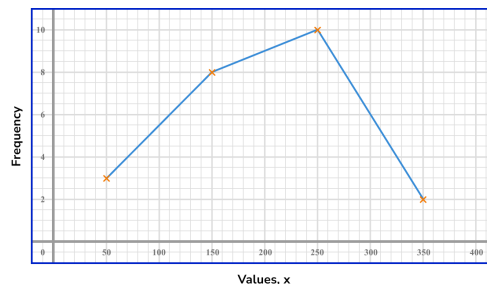
3)



4)

Values, x	Frequency
$0 \leq x < 100$	3
$100 \leq x < 200$	8
$200 \leq x < 300$	10
$300 \leq x < 400$	2

4)



Frequency Polygon - Answers

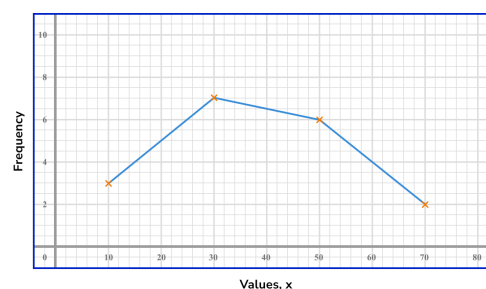
Group C

For these grouped frequency tables, draw a frequency polygon:

1)

Values, x	Frequency
$0 \leq x < 20$	3
$20 \leq x < 40$	7
$40 \leq x < 60$	6
$60 \leq x < 80$	2

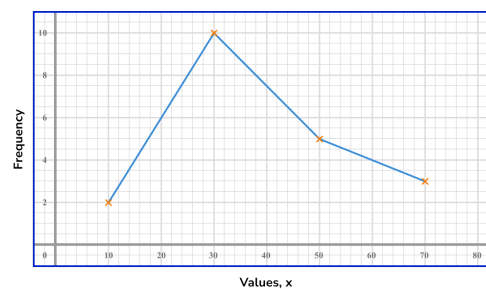
1)



2)

Values, x	Frequency
$0 \leq x < 20$	2
$20 \leq x < 40$	10
$40 \leq x < 60$	5
$60 \leq x < 80$	3

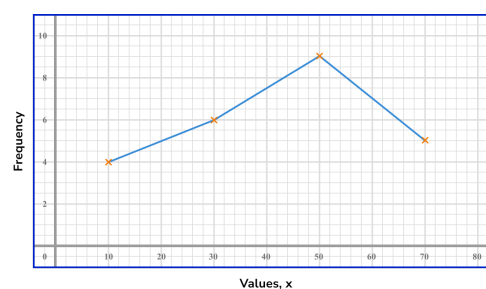
2)



3)

Values, x	Frequency
$0 \leq x < 20$	4
$20 \leq x < 40$	6
$40 \leq x < 60$	9
$60 \leq x < 80$	5

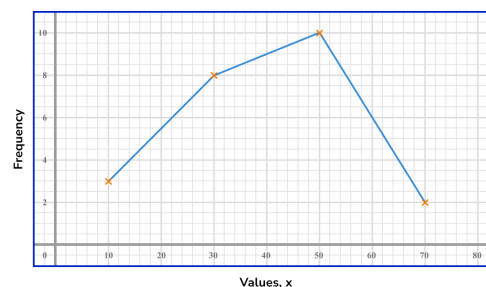
3)



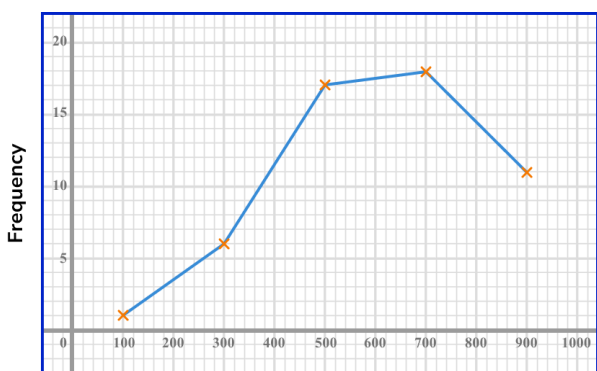
4)

Values, x	Frequency
$0 \leq x < 20$	3
$20 \leq x < 40$	8
$40 \leq x < 60$	10
$60 \leq x < 80$	2

4)



Frequency Polygon - Answers

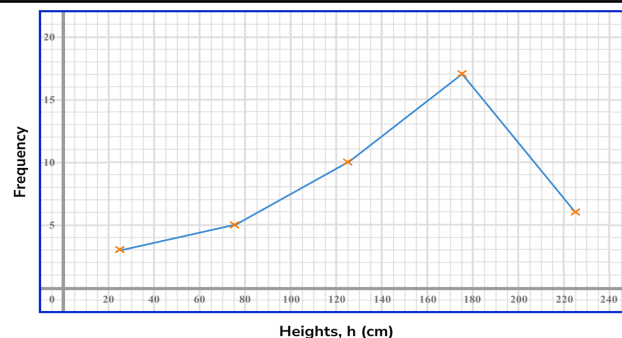
	Question	Answer												
	Applied Questions													
1)	<p>A farmer keeps a record of the yields from his blueberry plants. Here are the results:</p> <table><thead><tr><th>Weights, w (g)</th><th>Frequency</th></tr></thead><tbody><tr><td>$0 < h \leq 200$</td><td>1</td></tr><tr><td>$200 < h \leq 400$</td><td>6</td></tr><tr><td>$400 < h \leq 600$</td><td>17</td></tr><tr><td>$600 < h \leq 800$</td><td>18</td></tr><tr><td>$800 < h \leq 1000$</td><td>11</td></tr></tbody></table> <p>a) Draw a frequency polygon for the results.</p> <p>b) How many blueberry plants did the farmer measure the yields for?</p>	Weights, w (g)	Frequency	$0 < h \leq 200$	1	$200 < h \leq 400$	6	$400 < h \leq 600$	17	$600 < h \leq 800$	18	$800 < h \leq 1000$	11	<p>a)</p>  <p>Weights, w (g)</p> <p>b) There were 53 blueberry plants whose yields were measured.</p>
Weights, w (g)	Frequency													
$0 < h \leq 200$	1													
$200 < h \leq 400$	6													
$400 < h \leq 600$	17													
$600 < h \leq 800$	18													
$800 < h \leq 1000$	11													
2)	<p>Sam measures the heights of some plants. Here are the results:</p> <table><thead><tr><th>Heights, h (cm)</th><th>Frequency</th></tr></thead><tbody><tr><td>$0 < h \leq 50$</td><td>3</td></tr><tr><td>$50 < h \leq 100$</td><td>5</td></tr><tr><td>$100 < h \leq 150$</td><td>10</td></tr><tr><td>$150 < h \leq 200$</td><td>17</td></tr><tr><td>$200 < h \leq 250$</td><td>6</td></tr></tbody></table>	Heights, h (cm)	Frequency	$0 < h \leq 50$	3	$50 < h \leq 100$	5	$100 < h \leq 150$	10	$150 < h \leq 200$	17	$200 < h \leq 250$	6	
Heights, h (cm)	Frequency													
$0 < h \leq 50$	3													
$50 < h \leq 100$	5													
$100 < h \leq 150$	10													
$150 < h \leq 200$	17													
$200 < h \leq 250$	6													

Frequency Polygon - Answers

a) Draw a frequency polygon for the results.

b) How many plants were less than or equal to 1m tall?

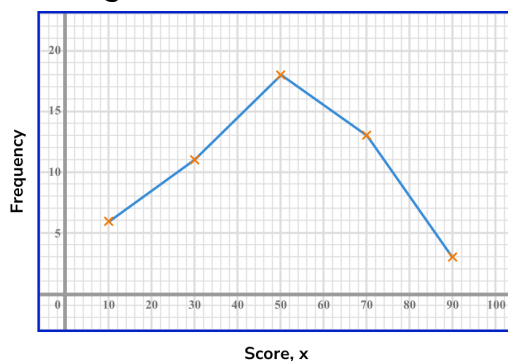
a)



b) 8 plants were less than or equal to 1m tall.

3)

Here is a frequency polygon showing scores in a test.



a) Complete the grouped frequency table:

Scores, x	Frequency
$0 \leq x < 20$	
$20 \leq x < 40$	
$40 \leq x < 60$	
$60 \leq x < 80$	
$80 \leq x < 100$	

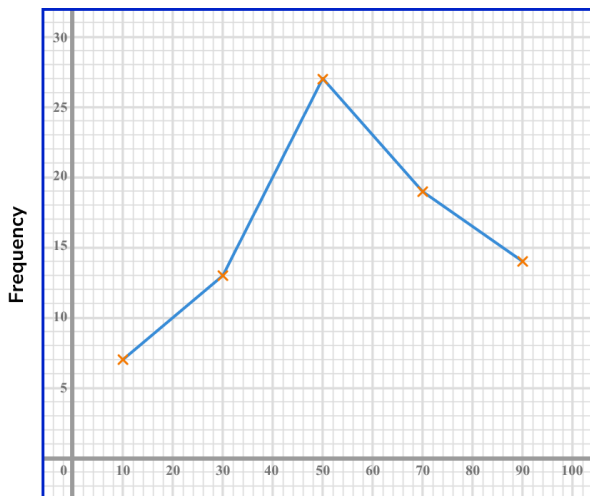
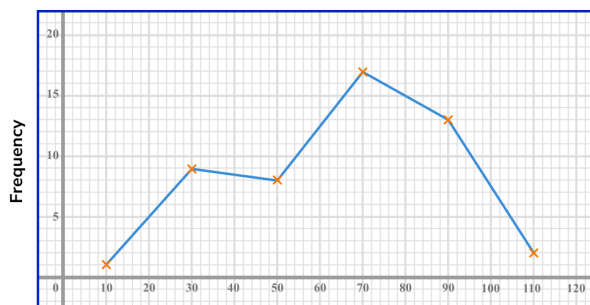
b) The pass mark was 40. How many people passed the test?

a)

Scores, x	Frequency
$0 \leq x < 20$	6
$20 \leq x < 40$	11
$40 \leq x < 60$	18
$60 \leq x < 80$	13
$80 \leq x < 100$	3

b) 34 people passed the test.

Frequency Polygon - Mark Scheme

	Question	Answer														
	Exam Questions															
1)	<p>The test scores of 80 students are recorded.</p> <p>The frequency table shows the information.</p> <table border="1"><thead><tr><th>Scores, x</th><th>Frequency</th></tr></thead><tbody><tr><td>$0 \leq x < 20$</td><td>7</td></tr><tr><td>$20 \leq x < 40$</td><td>13</td></tr><tr><td>$40 \leq x < 60$</td><td>27</td></tr><tr><td>$60 \leq x < 80$</td><td>19</td></tr><tr><td>$80 \leq x < 100$</td><td>14</td></tr></tbody></table> <p>Draw a frequency polygon for the information in the table.</p>	Scores, x	Frequency	$0 \leq x < 20$	7	$20 \leq x < 40$	13	$40 \leq x < 60$	27	$60 \leq x < 80$	19	$80 \leq x < 100$	14	<p>Midpoints - 10, 30, 50, 70, 90</p>  <p>(1)</p>		
Scores, x	Frequency															
$0 \leq x < 20$	7															
$20 \leq x < 40$	13															
$40 \leq x < 60$	27															
$60 \leq x < 80$	19															
$80 \leq x < 100$	14															
2)	<p>The speeds of 50 vehicles are recorded.</p> <p>The frequency table shows the information.</p> <table border="1"><thead><tr><th>Speed, v (kmph)</th><th>Frequency</th></tr></thead><tbody><tr><td>$0 < v \leq 20$</td><td>1</td></tr><tr><td>$20 < v \leq 40$</td><td>9</td></tr><tr><td>$40 < v \leq 60$</td><td>8</td></tr><tr><td>$60 < v \leq 80$</td><td>17</td></tr><tr><td>$80 < v \leq 100$</td><td>13</td></tr><tr><td>$100 < v \leq 120$</td><td>2</td></tr></tbody></table> <p>Draw a frequency polygon for the information in the table.</p>	Speed, v (kmph)	Frequency	$0 < v \leq 20$	1	$20 < v \leq 40$	9	$40 < v \leq 60$	8	$60 < v \leq 80$	17	$80 < v \leq 100$	13	$100 < v \leq 120$	2	<p>Midpoints - 10, 30, 50, 70, 90, 110</p>  <p>(1)</p>
Speed, v (kmph)	Frequency															
$0 < v \leq 20$	1															
$20 < v \leq 40$	9															
$40 < v \leq 60$	8															
$60 < v \leq 80$	17															
$80 < v \leq 100$	13															
$100 < v \leq 120$	2															

Frequency Polygon - Mark Scheme

3)

The heights of 30 students are measured.

The frequency table shows the information.

Heights, h (cm)	Frequency
$120 < h \leq 130$	1
$130 < h \leq 140$	5
$140 < h \leq 150$	10
$150 < h \leq 160$	9
$160 < h \leq 170$	3

Draw a frequency polygon for the information in the table.

Midpoints - 125, 135, 145, 155, 165

The figure is a frequency polygon graph. The horizontal axis (x-axis) is labeled 'Heights, h (cm)' and has major tick marks at 120, 130, 140, 150, 160, 170, and 180. The vertical axis (y-axis) is labeled 'Frequency' and has major tick marks at 0, 2, 4, 6, 8, 10, and 12. A blue line connects five data points, each marked with an orange 'x'. The points are located at the following coordinates: (125, 1), (135, 5), (145, 10), (155, 9), and (165, 3). The graph is enclosed in a blue rectangular border.

Heights, h (cm)	Frequency
125	1
135	5
145	10
155	9
165	3

(1)

(1)

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