1. You take a look around your classroom one day and note what color shirts your classmates are wearing, collecting the following data.

Purple	Blue	Black	Purple	Blue	Black	Pink	Purple	Purple	Red
Black	Blue	Orange	Orange	Blue	Red	Orange	Pink	White	Purple
Green	Orange	White	Purple	Black	Yellow	Green	Red	Pink	Orange

Use the data collected to construct a **frequency** and **relative frequency** distribution.

Color	**Frequency**	**Relative Frequency**
Red	**3**	$\frac{3}{30} = 0.100$
Orange	**5**	$\frac{5}{30} = 0.167$
Yellow	**1**	$\frac{1}{30} = 0.033$
Green	**2**	$\frac{2}{30} = 0.067$
Blue	**4**	$\frac{4}{30} = 0.133$
Purple	**6**	$\frac{6}{30} = 0.200$
Pink	**3**	$\frac{3}{30} = 0.100$
Black	**4**	$\frac{4}{30} = 0.133$
White	**2**	$\frac{2}{30} = 0.067$
Total	**30**	$\frac{30}{30} = 1.00$

2. Consider the following scores that Miss Frizzle's students made on their Biology final exam.

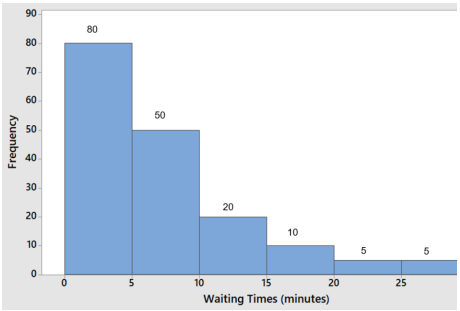
51	57	59	62	64	65	65	68	71	72	74	78	78	78	79	80
83	83	85	86	87	87	87	89	89	90	91	93	93	94	95	97
97	98	98	99	100											

Construct a **stem-and-leaf plot** of the exam scores. Include a **key**.

Key: 5 | 1 = exam score of 51

5	1 7 9
6	2 4 5 5 8
7	1 2 4 8 8 8 9
8	0 3 3 5 6 7 7 7 9 9
9	0 1 3 3 4 5 7 7 8 8 9
10	0

3. Consider the following histogram of waiting times (in minutes) for a sample of 170 patients at Grey Sloan Memorial Hospital.



(a) Describe the **shape** of the distribution.

The distribution is skewed right, with most of the values clustering in the 0–10 minute range. There are no gaps or clear outliers in the data.

(b) What **class width** was chosen for the histogram? (Include units in your answer.)

The class width is 5 minutes.

(c) How many patients had to wait **longer than** twenty minutes?

10 patients had to wait longer than 20 minutes. (Add the frequencies from the 20–25 and 25–30 classes.)

(d) What is the **relative frequency** of patients who waited less than five minutes?

$\frac{80}{170} \approx 0.471$ (47.1%) of patients waited less than 5 minutes.