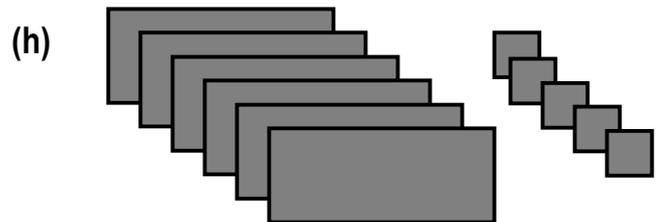
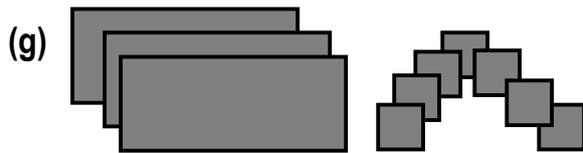
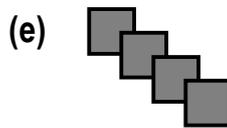


TOPIC 1. PLACE VALUE

Exercise 1

1. This shows 1 (whole number)  and this shows 0.4 ($\frac{4}{10}$) 

What do the following shaded diagrams represent?



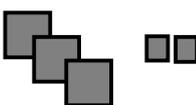
2. Draw neat pictures (in the same way as question 1) to represent:

(a) 0.3

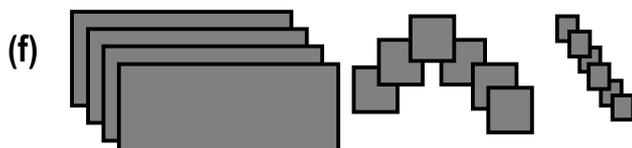
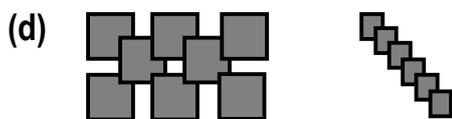
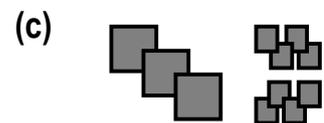
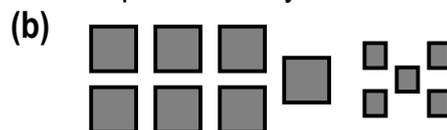
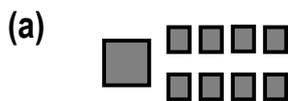
(b) 1.4

(c) 2.6

(d) 4.4

3. Remember that this  stands for 0.32 ($\frac{32}{100}$)

What decimal fractions are represented by the following?



4. Draw neat pictures (in the same way as question 3) to represent:
- (a) 0.24 (b) 1.32 (c) 4.25 (d) 1.06

Exercise 2

1. What does the **5** represent in each of these numbers:
(a) 35.62 (b) 52.04 (c) 96.357 (d) 0.523 (e) 0.015
2. What does the **2** represent in each of these numbers:
(a) 12.789 (b) 5.203 (c) 89.542 (d) 0.1273 (e) 0.9123
3. Arrange the following groups of numbers in order, largest first:
(a) 0.5, 0.09, 0.14, 1.09, 0.091
(b) 1.003, 0.904, 0.409, 1.099, 1.1, 0.801
4. Write out the following numbers **fully** in words
(a) 3254 (b) 35 436 (c) 879 135 (d) 1 465 183 (e) 65 481 651
5. Write the following numbers using digits
(a) four hundred and three
(b) two thousand and twenty five
(c) twelve thousand four hundred and two
(d) seven hundred and twenty four thousand six hundred and ninety seven
(e) five million and two
(f) twelve million four hundred and twenty five thousand nine hundred and fifteen.

Exercise 3

1. The number 1.326 can be thought of as follows:
$$1.326 = 1 \text{ unit} + \frac{3}{10} + \frac{2}{100} + \frac{6}{1000} \text{ or } 1 \text{ unit} + \frac{326}{1000}$$

Write the following decimals in the same two ways:

- (a) 1.512 (b) 6.123 (c) 0.809 (d) 52.19 (e) 1.041

2. What number is:

(a) $\frac{1}{10}$ up from 6.2

(b) $\frac{7}{10}$ down from 6.3

(c) $\frac{3}{10}$ up from 5.9

(d) $\frac{1}{100}$ down from 6.23

(e) $\frac{5}{100}$ up from 7.99

(f) $\frac{23}{100}$ up from 3.521

3. What number lies half way between:

(a) 0.2 and 0.6

(b) 0.4 and 1.0

(c) 1.3 and 1.4

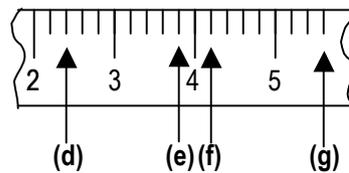
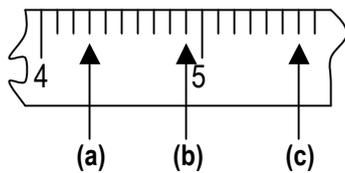
(d) 0.12 and 0.18

(e) 1.401 and 1.395

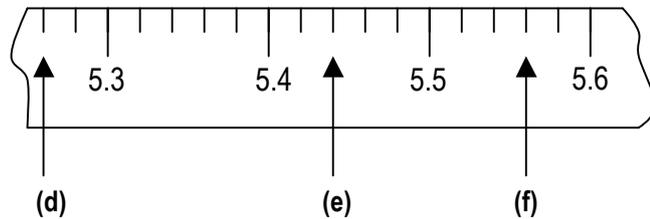
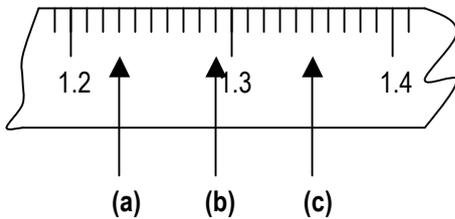
(f) 2.315 and 2.325

Exercise 4

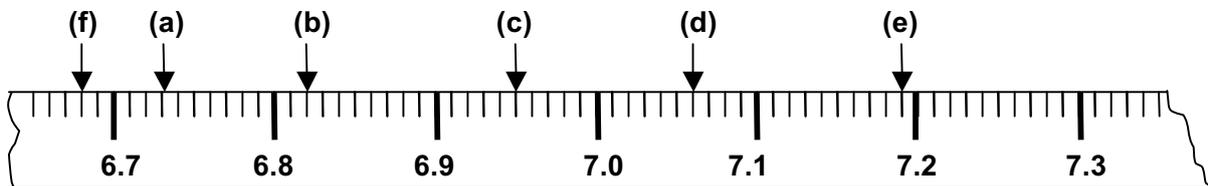
1. What numbers do the letters **a**, **b**, **c**, **d**, **e**, **f** and **g** point to here?



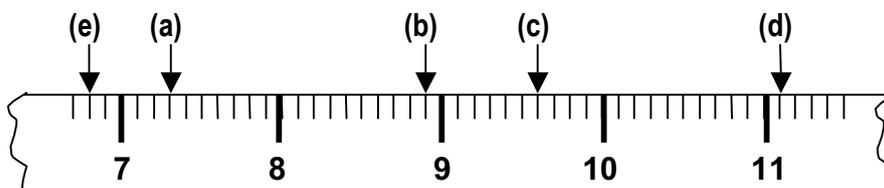
2. What numbers do the letters **a**, **b**, **c**, **d**, **e** and **f** point to here?



3. What numbers do the letters **a**, **b**, **c**, **d**, **e** and **f** point to here?



4. What numbers do the letters **a**, **b**, **c**, **d**, and **e** point to here?



TOPIC 2. WHOLE NUMBERS

Exercise 1

Try to do this exercise **mentally**. If you are struggling to do the questions mentally, use any written method that helps you.

1. Write down the answers to:

- (a) $27 + 34$ (b) $76 + 37$ (c) $136 + 85$ (d) $147 + 135$
(e) $351 + 279$ (f) $2100 + 3700$ (g) $4600 + 2700$ (h) $6450 + 3350$.

2. Write down the answers to:

- (a) $58 - 37$ (b) $96 - 39$ (c) $170 - 49$ (d) $185 - 118$
(e) $270 - 195$ (f) $865 - 495$ (g) $3100 - 1200$ (h) $9750 - 7450$.

3. Find:

- (a) $530 + 880$ (b) $4320 - 620$ (c) $5650 + 3700$ (d) $9980 - 5320$
(e) $5555 + 4445$ (f) $9090 - 2100$ (g) $2080 + 3040$ (h) $9870 - 8990$.

4. (a) An army plane takes off with 72 soldiers.

Forty seven soldiers parachute from the plane.
How many soldiers are left on the plane?

(b) The dentist charged Mr. Molar £245 for a crown and £76 for a filling.
How much was Mr. Molar's total bill?

(c) Janice earned £1850 per month and Joe earned £790.

(i) How much did they earn altogether?

(ii) How much more did Janice earn than Joe?

5. Miss Savey had £265 in her wallet.

She spent £99 on a new jacket and £79 on a pair of shoes.

She then took £120 from a cash line machine.

How much money does Miss Savey have in her possession now?

Exercise 2

Show all your working for this exercise.

1. Copy the following and find the answers:

- (a) $\begin{array}{r} 678 \\ + 396 \\ \hline \end{array}$ (b) $\begin{array}{r} 468 \\ + 222 \\ \hline \end{array}$ (c) $\begin{array}{r} 499 \\ - 368 \\ \hline \end{array}$ (d) $\begin{array}{r} 777 \\ + 333 \\ \hline \end{array}$

$$\begin{array}{r} \text{(e)} \ 904 \\ - 717 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(f)} \ 8008 \\ + 1764 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(g)} \ 2345 \\ + 7656 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(h)} \ 5004 \\ - 4295 \\ \hline \end{array}$$

$$\text{(i)} \ 4870 + 888$$

$$\text{(j)} \ 5432 + 3577$$

$$\text{(k)} \ 7941 - 5974$$

$$\text{(l)} \ 9009 - 178$$

2. (a) Last season, the Tigers scored 4375 points and the Panthers scored 2680 points.
- (i) How many points were scored altogether?
- (ii) How many more points were scored by the Tigers than the Panthers?
- (b) A secretary earned £7660 last year. This year she received a pay increase of £1360. What is her salary this year?
- (c) Jay has £2450. He gives Paul £360, Beth £660 and Andy £150. Peter gives Jay £75. How much money does Jay have now?

Exercise 3

1. Copy the following and complete the calculations:

$$\begin{array}{r} \text{(a)} \ 55 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(b)} \ 71 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \ 34 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(d)} \ 27 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(e)} \ 238 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(f)} \ 367 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(g)} \ 308 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(h)} \ 132 \\ \times 7 \\ \hline \end{array}$$

2. Rewrite each of these in the above form and complete the calculations:

$$\text{(a)} \ 35 \times 6$$

$$\text{(b)} \ 93 \times 5$$

$$\text{(c)} \ 8 \times 43$$

$$\text{(d)} \ 78 \times 7$$

$$\text{(e)} \ 9 \times 406$$

$$\text{(f)} \ 8 \times 333$$

$$\text{(g)} \ 9231 \times 9$$

$$\text{(h)} \ 4 \times 4444$$

3. Show all working:

(a) How many minutes are there in eight hours?

(b) How many hours are in a week?

(c) Find: (i) $3 \times 72 \times 4$ (ii) $5 \times 621 \times 7$

4. (a) Buzz has 9 packs of trading cards. Each pack contains 136 cards.

How many cards does Buzz have?

(b) Sadie can write 368 words (in shorthand) in 4 minutes.

At the same rate, how many words can she write in one minute?

Exercise 4

1. Copy the following and complete each calculation:

(a) $7\overline{)63}$

(b) $5\overline{)735}$

(c) $8\overline{)440}$

(d) $9\overline{)5571}$

2. Set the following down in the same way as above and complete each calculation:

(a) $64 \div 4$

(b) $378 \div 2$

(c) $824 \div 4$

(d) $364 \div 7$

(e) $2664 \div 6$

(f) $2875 \div 5$

(g) $8204 \div 4$

(h) $7578 \div 9$

3. Show all your working in solving the following:

(a) A box can hold 8 teddy bears. How many boxes are needed for 248 teddies?

(b) A spoonful of medicine holds 5 millilitres.

How many spoonfuls would you need for 275 millilitres?

(c) Find the answer to: (i) $3836 \div 4 \div 7$

(ii) $7 \times 235 \div 5$.

4. Find the remainder in each question:

(a) $656 \div 8$

(b) $2208 \div 6$

(c) $8815 \div 9$

(d) $3141 \div 5$

5. A mini-bus can take 9 pupils at a time to the swimming pool.

There are 120 pupils to go to the pool.

(a) How many journeys will the bus need to make?

(To the pool and back is counted as 1 journey).

(b) How many pupils will be on the bus on the last journey?

Exercise 5

1. Write down the answers to the following:

(a) 45×10

(b) 22×10

(c) 10×76

(d) 10×20

(e) 123×10

(f) 802×10

(g) 10×1200

(h) 10×1030

2. Write down the answers to the following:

(a) 41×100

(b) 99×100

(c) 100×231

(d) 100×100

(e) 501×100

(f) 100×300

(g) 100×2020

(h) 5000×100

3. Write down the answers to these:

- (a) 230×10 (b) 330×100 (c) 404×10 (d) 100×660
(e) 10×900 (f) 1000×100 (g) 1010×10 (h) 2000×100

4. A bottle holds 100 millilitres of medicine.

How many millilitres are there in: (a) 4 bottles (b) 30 bottles?

5. There are 10 millimetres in 1 centimetre.

How many millimetres are there in: (a) 5 cm (b) 40 cm (c) 101 cm (d) 1000 cm?

Exercise 6

1. Write down the answers to the following:

- (a) $330 \div 10$ (b) $560 \div 10$ (c) $700 \div 10$ (d) $3000 \div 10$
(e) $8000 \div 10$ (f) $5500 \div 10$ (g) $10\,000 \div 10$ (h) $140\,500 \div 10$

2. Write down the answers to the following:

- (a) $200 \div 100$ (b) $1600 \div 100$ (c) $8000 \div 100$ (d) $24\,000 \div 100$
(e) $10\,000 \div 100$ (f) $20\,100 \div 100$ (g) $300\,000 \div 100$ (h) $5\,000\,000 \div 100$

3. Write down the answers to these:

- (a) $9000 \div 100$ (b) $2050 \div 10$ (c) $22\,000 \div 100$ (d) $1100 \div 10$
(e) $8700 \div 100$ (f) $10\,000 \div 10$ (g) $1000 \div 100$ (h) $100 \div 100$

4. There are 10 millimetres in 1 centimetre and 100 centimetres in 1 metre.

How many metres are equivalent to:

- (a) 500 cm (b) 80 000 cm (c) 50 000 mm (d) 100 000 mm?

5. A bottle can hold 100 headache pills.

How many similar bottles are needed to hold: (a) 700 pills (b) 40 000 pills?

TOPIC 3. PROBABILITY

Exercise 1

1. For each of these statements, say whether the probability of it happening is:
impossible – less than likely – evens – more than likely – definite
- (a) Choose a card from a deck of cards and it is red
 - (b) Go on a diet and lose two stones overnight because of it
 - (c) Go on a diet and lose one pound in a week because of it
 - (d) It will be sunny every day in January
 - (e) If you jump into a swimming pool, you will get wet
 - (f) If I flip a coin, it will end up showing a tail
 - (g) If I choose a day at random, it will be a day from the weekend
 - (h) The next person I pass in the corridor will be female
 - (i) If today is Friday, then tomorrow will be Sunday
 - (j) A new born baby boy will weigh less than 6 kilograms
 - (k) If I choose a bead at random from a bag containing only blue beads, the bead will be blue
 - (l) If I choose a bead at random from a bag containing only blue beads, the bead will be red.

Exercise 2

1. A normal dice is rolled and the number on top is noted.
- (a) How many numbers are there on a standard dice?
 - (b) What is the probability that it will show a five? $P(5) = ?$
 - (c) What is the probability that it will show a one? $P(1) = ?$
 - (d) What is the probability that it will show an even number? $P(\text{even}) = ?$
 - (e) What is the probability that it will show a number greater than 2? $P(>2) = ?$
 - (f) What is the probability that it will show a seven? $P(7) = ?$
2. Six men and nine women write their names on pieces of paper, fold them up and put them in a hat. If a name is pulled at random from the hat, what is the probability
- (a) It will be a man's name?
 - (b) It will be a woman's name?

3. A gardener has 4 white, 6 yellow and 10 red pansy seeds, but they are mixed up and he can't tell which is which. If he picks out one at random and plants it in a pot, what is the probability that he has chosen a pansy which is:

- (a) white? (b) red? (c) not white?
(d) yellow or white? (e) red white or yellow? (f) purple?

4. A jar contains 2 blue, 16 green and 6 red gobstopper sweeties in it.
If a sweet is removed at random, calculate the following probabilities :-

- (a) P(blue) (b) P(red)
(c) P(green) (d) P(brown).

5. There are 50 fruits in a box – a mixture of lemons and limes.
The probability of picking a lemon is $\frac{3}{10}$

- (a) What is the probability of picking a lime?
(b) How many lemons and how many limes are there in the box?

6. Steven the weather man said

“The probability it will be rainy tomorrow is 0.4”.

What is the probability it will be sunny tomorrow?

7. Amy was asked to choose a number from 1 to 10.

What is the probability that she will choose:

- (a) the number 3 (b) an even number (c) the number 15 (d) any number from 3 to 9?

8. A fruit bowl contains 5 apples, 3 pears, 4 oranges and 2 satsumas.

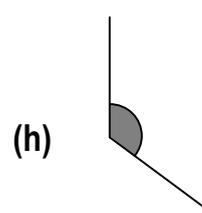
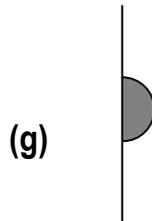
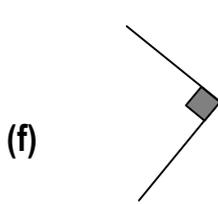
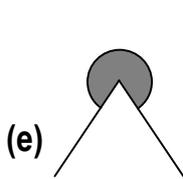
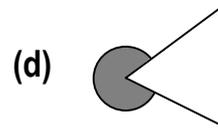
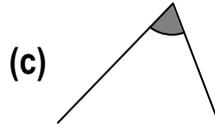
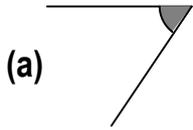
If Anna asks her mum to pass her a piece of fruit, what is the **probability** she will be handed:

- (a) an apple (b) an orange (c) a pear (d) a banana?

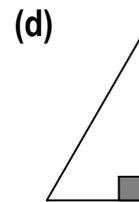
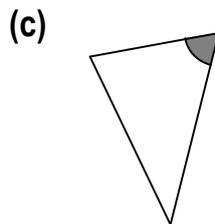
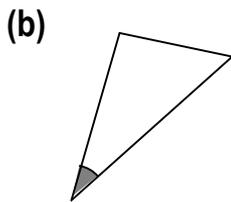
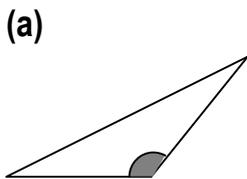
TOPIC 4. ANGLES

Exercise 1

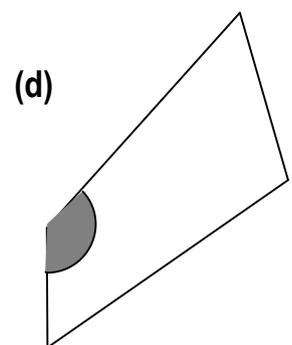
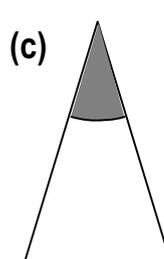
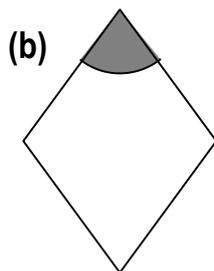
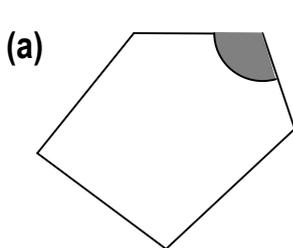
1. Use a word from “ACUTE, RIGHT, OBTUSE, STRAIGHT or REFLEX” to describe these angles:



2. What type of angle is shaded in these triangles?



3. What type of angle is marked in these shapes?



4. Look at the angle sizes listed below:

250° , 78° , 102° , 12° , 45° , 112° , 180° , 93° , 90° , 359° , 6° , 174°

Write down the sizes of those angles that are:

(a) acute

(b) obtuse

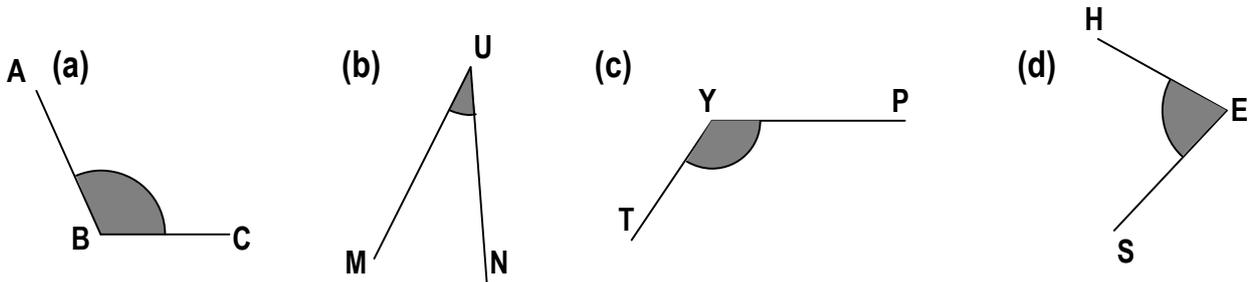
(c) straight

(d) right

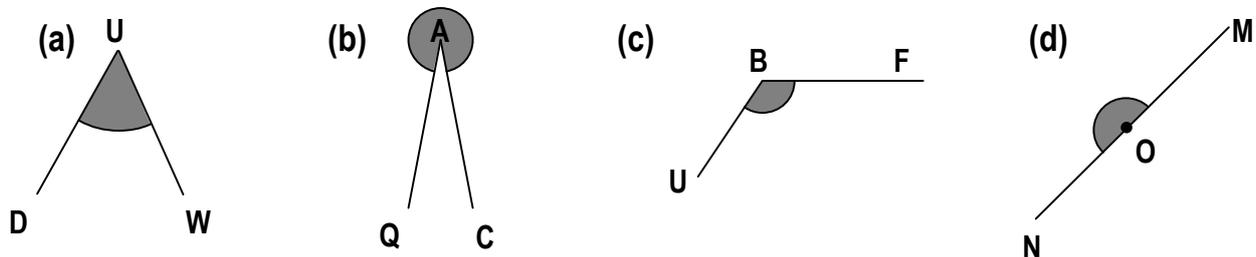
(e) reflex.

Exercise 2

1. Use 3 LETTERS each time to name the shaded angle:



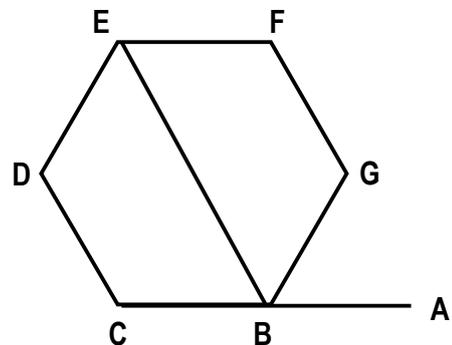
2. Use THREE letters to NAME each angle and write down what TYPE of angle it is:



3. Copy the diagram shown opposite.

(a) Mark:

- (i) $\angle DCB$ with an **x**.
- (ii) $\angle FEB$ with an **o**.
- (iii) $\angle ABG$ with an *****.

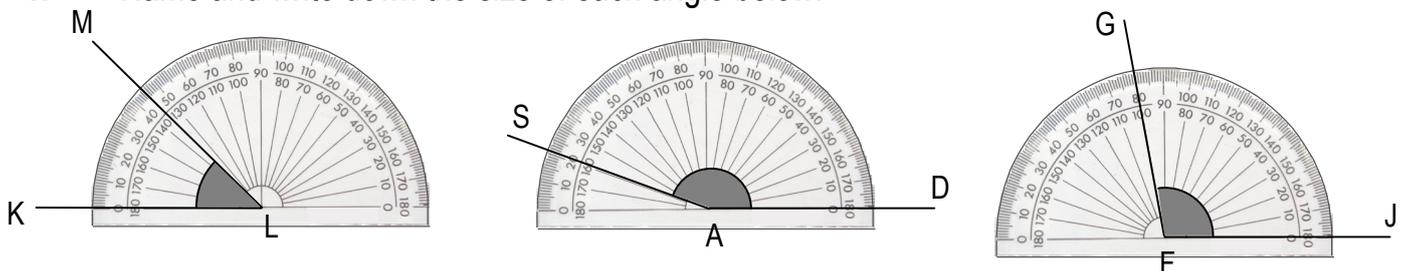


(b) What TYPE of angle is:

- (i) $\angle DEB$
- (ii) $\angle EDC$
- (iii) $\angle EBA$?

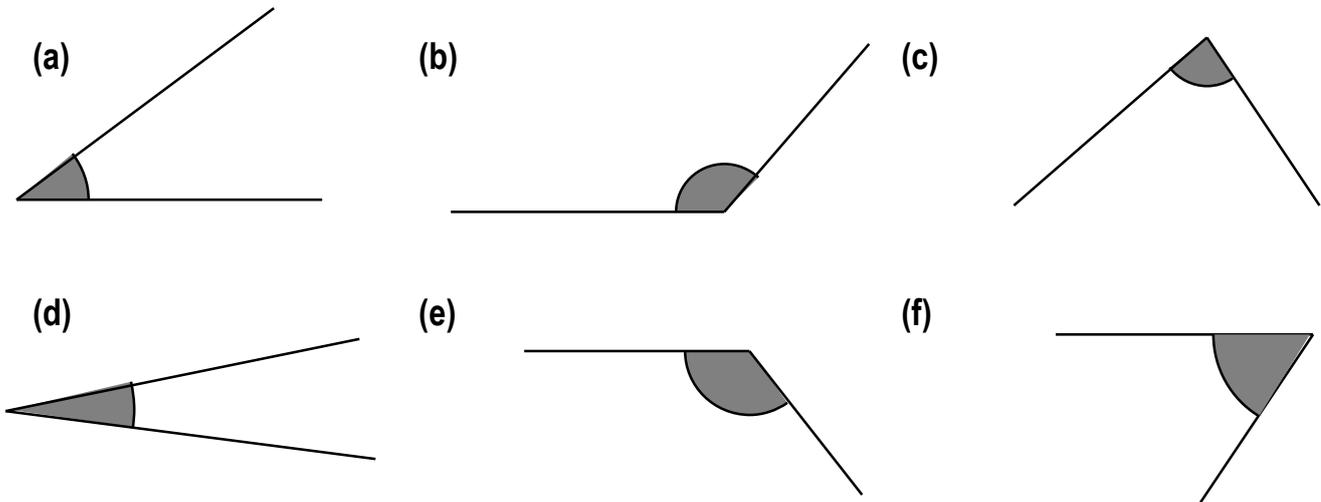
Exercise 3

1. Name and write down the size of each angle below:



You will require a PROTRACTOR

2. For each shaded angle: (i) estimate its size, (then)
(ii) use a protractor to measure each angle.



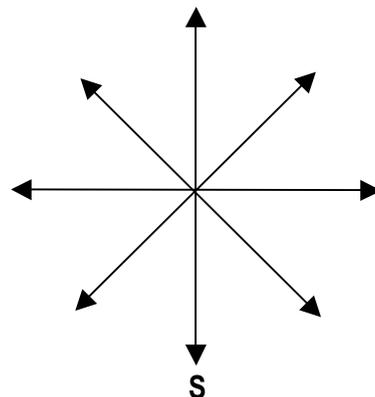
Exercise 4

You will require a RULER and a PROTRACTOR

1. Draw and label these angles:
- | | |
|------------------------------|------------------------------|
| (a) $\angle DEF = 60^\circ$ | (b) $\angle PQR = 20^\circ$ |
| (c) $\angle KLM = 120^\circ$ | (d) $\angle STU = 160^\circ$ |
2. Now draw and label these angles:
- | | |
|------------------------------|------------------------------|
| (a) $\angle AGT = 45^\circ$ | (b) $\angle NWD = 78^\circ$ |
| (c) $\angle GFU = 115^\circ$ | (d) $\angle CKP = 172^\circ$ |

Exercise 5

1. COPY and complete the remaining
7 points of the compass on the diagram shown.



2. How many degrees are there from:
- | | |
|-------------------------------------|--|
| (a) South to West (clockwise) | (b) North to West (clockwise) |
| (c) North to South-East (clockwise) | (d) East to South-West (clockwise) |
| (e) West to North (anti-clockwise) | (f) North to South-West (anti-clockwise) |
| (g) East to North-West (clockwise) | (h) South to North-West (anti-clockwise) |
3. (a) George was facing South. He then made a $\frac{1}{4}$ turn clockwise. In what direction is George now facing?
- (b) The wind was blowing in a North-Westerly direction. It then turned through an angle of 180° . In which direction was the wind now blowing?
- (c) A ship was sailing North-East. The ship then turned through 90° clockwise. In which direction did the ship end up travelling?
- (d) A rambler was travelling South-West. She turned 90° anticlockwise and moved on. She then turned 135° clockwise. In which direction was she finally facing?
- (e) A jet is flying South-East. The jet turns clockwise and now faces North. By how many degrees had the jet turned through?
- (f) Clare was driving North East when she came to a roundabout. She then turned her car through 45° anti-clockwise. In which direction was Clare then driving?
- (g) A one-seater plane was flying South West. The pilot turned through 90° anti-clockwise. In which direction was the plane now flying?