

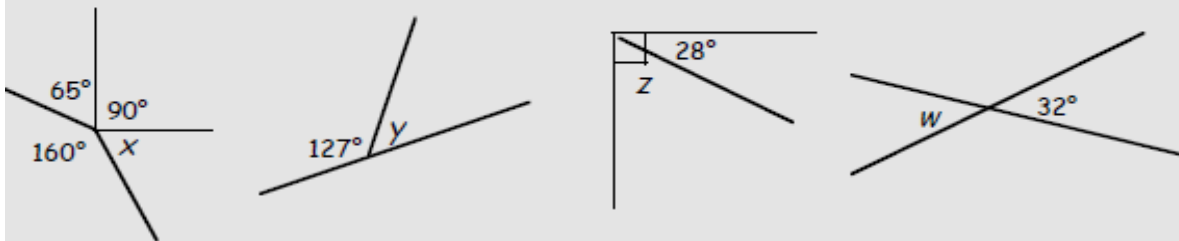
National 4 Mathematics: Homework 15

§ 1 Revision

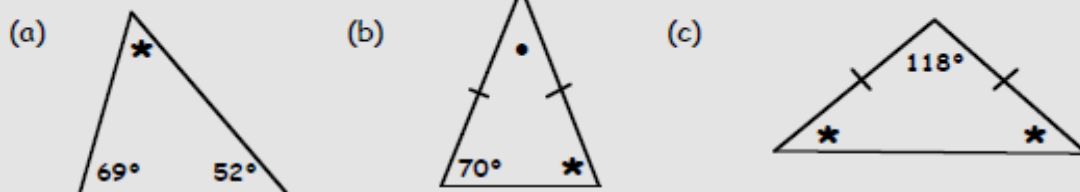
- 1 3 tyres from 'Slo-Fit' cost £135.60.
 - a) What is the cost of 1 tyre?
 - b) How much would it cost me if I wanted to replace all 4 tyres on my car?
- 2 In an eating competition, Suzy ate 22 pies in 4 minutes. Sarah ate 29 pies in 5 minutes. Which girl was the faster eater? (Who ate more pies in 1 minute?)
- 3 Simplify the following ratios as far as possible:-
 - a) 12:14
 - b) 20:35
 - c) 16:40
 - d) 24:18
 - e) 35:55
- 4 A farmer found the ratio of female pigs to male pigs = 3:7.
 - a) If he had 35 males, how many females did he have?
 - b) How many pigs did he have altogether?
- 5 An elderly Uncle left £44,000 in his will to his niece and nephew, Jill and Jack, to be divided in the ratio of their ages. Jill is 30 years of age and Tom is 25.
 - a) Write down and simplify the ratio of Jill's age: Jack's age.
 - b) How much would each receive? (Show all your working!)

6

Calculate the sizes of the angles marked x , y , z , ... and w . (do not measure them)



Sketch each triangle (neatly). Calculate the sizes of the missing angles and write them on your sketch.



7

The weight of a particular ingredient in making tablet should be quite accurate.
It is given as

$$(0.332 \pm 0.005) \text{ mg.}$$

- (a) What is the maximum permitted weight?
- (b) What is the minimum permitted weight?

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8

Put the following into tolerance form :-

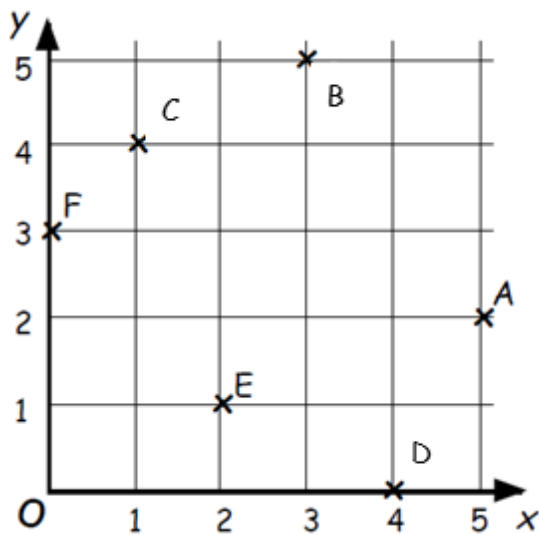
(a) min = 60 g
max = 70 g

(b) min = 128 cm
max = 132 cm

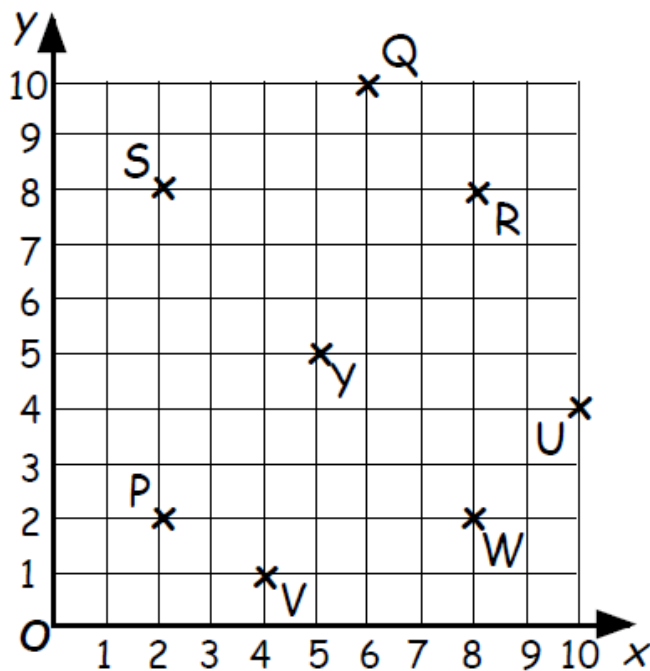
(c) min = 1500 m
max = 1700 m

§ 2 Revision

1 Write down the coordinates for each of the points below:



2



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- 3** Draw a coordinate diagram with x - and y -axes numbered from -6 to 6 .
(a) Plot the points $P(-5,-4)$, $Q(1,-1)$, $R(1,2)$ and $S(-2,2)$.
(b) What name is given to the shape PQRS?
- 4** The points $A(-3,2)$, $B(-4,-2)$ and $C(2,-1)$ are three vertices of parallelogram ABCD. Plot the points and draw the parallelogram on a coordinate diagram.
- 5** The points $K(-2,1)$ and $M(4,-1)$ are opposite vertices of square KLMN. Plot the points and draw the square on a coordinate diagram.

- 6** The weights, in kilograms, of 20 new-born babies are shown below:

2.8	3.4	2.8	3.1	3.0	4.0	3.5	3.8	3.9	2.9
2.7	3.6	2.5	3.3	3.5	4.1	3.6	3.4	3.2	3.4

Find the Mean, Median, Mode and Range

- 7** The weekly takings in small store, to the nearest £, for a week in December and March are shown below:

DECEMBER	2131	2893	2429	3519	4096	4810
MARCH	1727	2148	1825	2397	2901	3114

- (a) Calculate the mean takings for both December and March
(b) Give a reason for the difference in the answers in part (a)

- 8.** Calculate -:

(a) $16 + (-20)$	(b) $-21 + 13$	(c) $2 - 25$
(d) $25 - (-15)$	(e) $-15 - 25$	(f) $-90 - (-10)$

- 9** Calculate -:

(a) $4 \times (-7)$	(b) -3×9	(c) $-8 \times (-6)$	(d) $(-5)^2$
(e) $(-2)^3$	(f) $-54 \div 6$	(g) $-56 \div (-8)$	(h) $63 \div (-9)$