

Year Eleven Geometry Test 2003 -- (SYD. GIRLS H.S.)

Instructions

Name _____

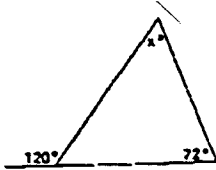
Write answers in the space provided

Show working and give reasons where necessary

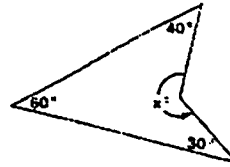
Question One (14 marks)

Find the value of the pronumeral in each of the following

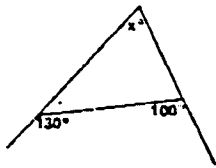
1)



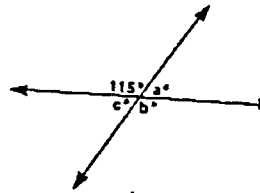
2)



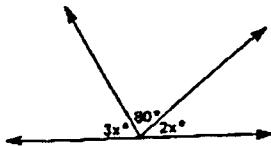
3)



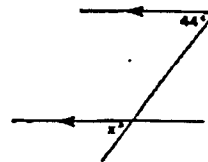
4)



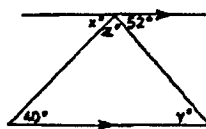
5)



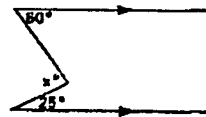
6)



7)



8)



Question Two (2 marks)

Give a definition of a parallelogram. (One sentence only)

Question Three (2 marks)

Draw a diagram of the following:

'In quadrilateral ABCD, AB is parallel to DC, AD and BC, when produced, meet at E.'



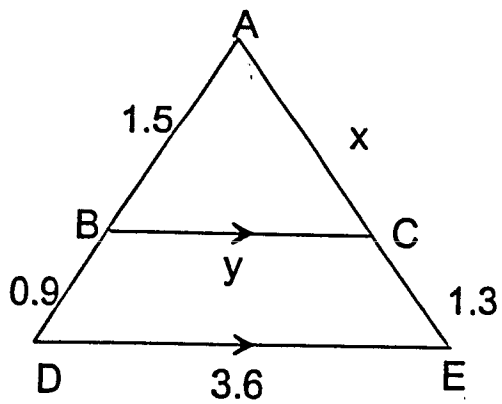
Question Four (4 marks)

a) Find the sum of the interior angles of an octagon

b) If the octagon is regular find the size of each interior angle

c) If the octagon is regular find the size of each exterior angle.

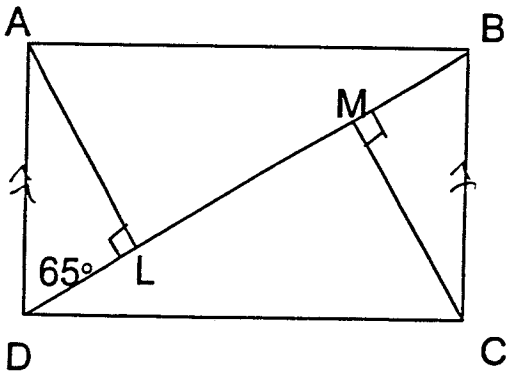
Question Five (6 marks)



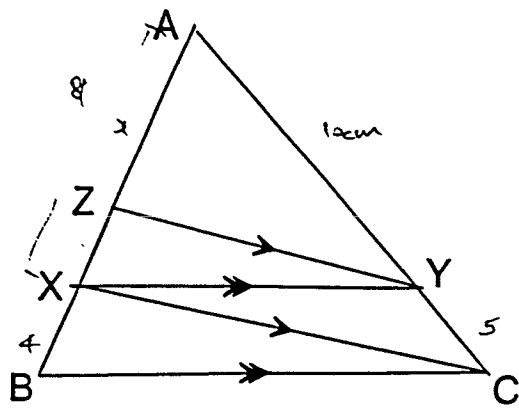
- a) Prove that triangle ABC is similar to triangle ADE
- b) Find the value of x and y correct to 2 decimal places

Question Six (6 marks)

ABCD is a rectangle. Prove $AL = MC$



Question Seven (3 marks)



In the diagram above $AY = 10\text{cm}$, $YC = 5\text{cm}$ and $XB = 4\text{cm}$, find ZX .

Question Eight (2 marks)

Show that it is not possible for a regular polygon to have interior angles of 152°

Question 7

$$\frac{AX}{XB} = \frac{10}{5} \quad (\text{II lines divide sides in equal ratios})$$

$$\therefore AX = 8$$

$$\frac{AZ}{ZX} = \frac{10}{5} \quad (u)$$

$$\frac{x}{8-x} = \frac{10}{5}$$

$$5x = 80 - 10x \quad \checkmark$$

$$15x = 80$$

$$x = 5\frac{1}{3} \text{ cm}$$

$$\therefore ZX = 2\frac{2}{3} \text{ cm} \quad \checkmark$$

Question 8

Let regular polygon have n sides

$$\text{Int } \angle: 152 = \frac{(n-2)180}{n}$$

$$152n = 180n - 360$$

$$360 = 28n \quad \checkmark$$

$$n \approx 12.85 \dots$$

\therefore since n is not integer no., not possible
for regular polygon to have interior \angle s 152°