Duration: 50 mins

Q1.

(a) Express as a single fraction in its simplest form $\dfrac{4}{x-2} - \dfrac{5}{x+1}$.

(b) Solve $2x(x+1) = 3(4-x)$.

(c) Anil and Yasmin buy some pens and notebooks from the same shop.
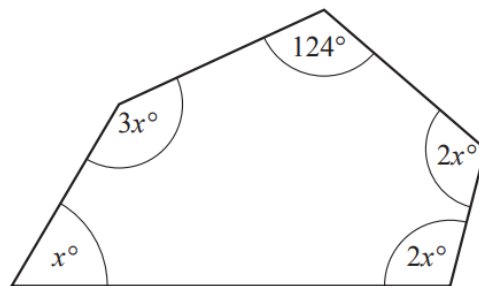
Anil buys 3 pens and 2 notebooks for \$4.80 .
Yasmin buys 5 pens and 4 notebooks for \$9.00 .

    (i) Form a pair of simultaneous equations to represent this information.

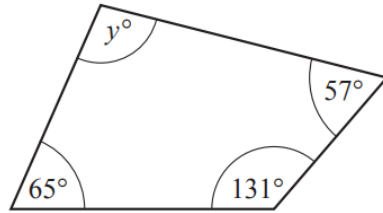   **(ii)** Solve the simultaneous equations to find the cost of a pen and the cost of a notebook.

Q2

a)

Work out the size of the largest angle in the pentagon.

Duration: 50 mins

b)

The angles in the quadrilateral are given correct to the nearest degree.

Find the lower bound for the value of y.

ELECTRONIC CALCULATORS MUST NOT BE USED IN THIS PAPER

Q3.

y is inversely proportional to x.

Given that $y = \dfrac{1}{6}$ when $x = 30$, find y when $x = 10$.

Q4.

$$a^x = 5$$

(a) Find a^{2x}.

(b) Find a^{-x}.

Duration: 50 mins

Q5.

   (a) Find 110% of 70.

   (b) When new, a car was worth $15 000.
   After one year it was worth $12 000.

   Calculate the percentage reduction in its value.

Q6.

   (a) Factorise $9a^2 - 6a$.

   (b) Factorise $4 - 25t^2$.

   (c) Factorise $6cd - xy + 2cx - 3dy$.