1. (a) Expand and simplify

(i) $(x + 3)(4x - 5)$

(2 marks)

(ii) $(3x - 2)^2$

(2 marks)

(iii) $(x - 1)^2 - x(x - 2)$

(3 marks)

(b) Factorize completely

(i) $9x^2 - 27x$

(2 marks)

(ii) $xy - y^2 - x - y$

(2 marks)

(iii) $x^2 - 81$

(2 marks)

(iv) $x^2 + 10x - 24$

(2 marks)

(v) $2x^2 - x - 10$

(2 marks)

Total of 21 marks

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2. (a) Solve the pair of simultaneous equations.

$4x - 3y = -29$ and $5x + 2y = 4$

(6 marks)

(b) 50 tickets were sold for a concert. Adult tickets cost \$5 and child tickets cost \$2, The total money taken from the sale of the tickets was \$160. Let x represent the number of child tickets and y represent the number of adult tickets. Form two equations and solve.

(7 marks)

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(c) Each interior angle of a regular polygon measures 140°.

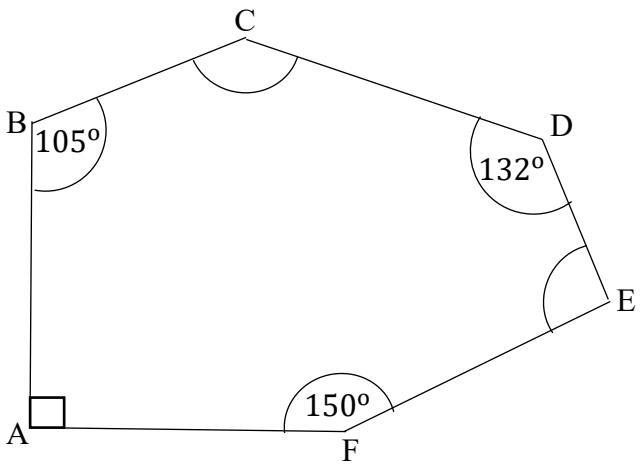
(i) Calculate the number of sides of the polygon.

(2 marks)

(ii) Write down the name of the polygon.

(1 mark)

(b)



ABCDEF is a hexagon.

Angle BCD = 2 × Angle DEF

(i) Calculate the sum of the interior angles of the polygon.

(2 marks)

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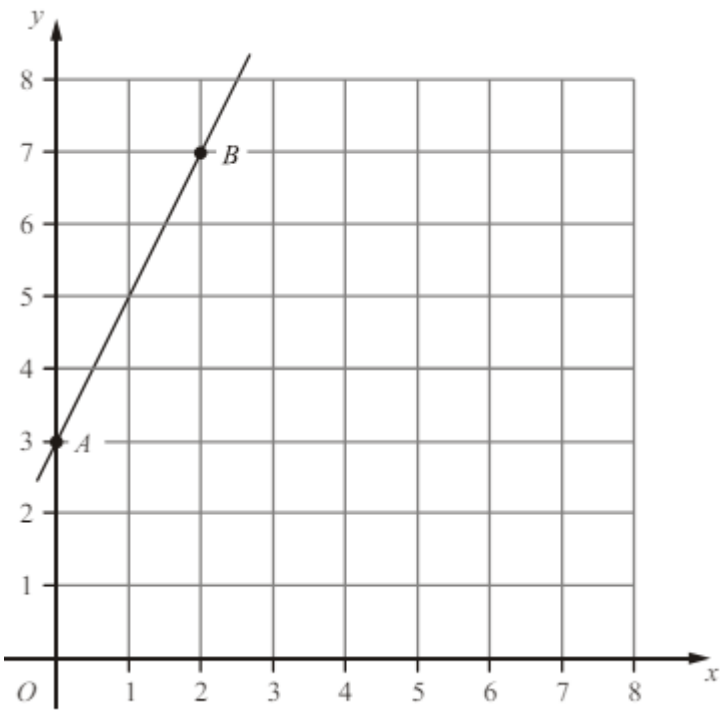
(ii) Calculate the size of angle DEF.

(3 marks)

Total of 22 marks

3. (a)



The diagram above shows a straight line passing through the points A and B.

(i) State the coordinates of the point B.

(1 mark)

(ii) Write down the gradient of the straight line.

(1 mark)

(iii) Write down the coordinates of the y-intercept of the straight line passing through the points A and B.

(1 mark)

(iv) State the equation of the straight line passing through the points A and B.

(2 marks)

(v) A straight line l passes through the point $(-3, 4)$ and is parallel to the line AB. Find the equation of l.

(3 marks)

(b) The coordinates of P and Q are $(8, 5)$ and $(4, -1)$ respectively. X is the midpoint of PQ.

Calculate:

(i) the length of PQ

(2 marks)

(ii) the gradient of PQ

(2 marks)

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(iii) the coordinates of X.

(2 marks)

(iv) Determine the equation of the perpendicular bisector of PQ and state the coordinates of the y – intercept.

(6 marks)

Total of 20 marks

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4.

(a) A jeweller paid \$6 800 for 165 bracelets bought in China. The Customs Department in his country charged him \$1 360 in duty.

(i) Calculate the total cost for the 165 bracelets inclusive of duty.

(2 marks)

(ii) Calculate the profit as a percentage of the cost price, giving your answer to the nearest whole number.

(2 marks)

(b) A car dealership has a special promotion. The cash price for a car is \$25 000. It can be bought on hire purchase by making a deposit of \$11 000 and simple interest of 5% per annum is charged on the difference. The amount is to be paid in 3 years.

(i) Calculate the simple interest charged for 3 years.

(3 marks)

(ii) Calculate the total amount to be paid in 3 years time.

(1 mark)

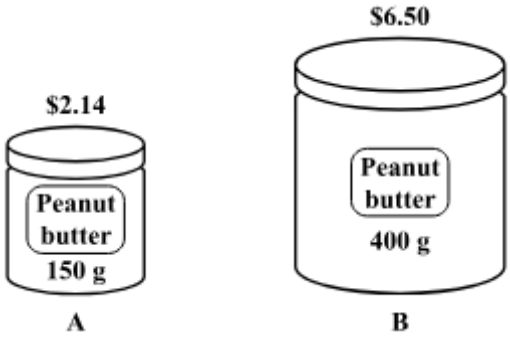
(iii) Calculate the amount of each monthly instalment.

(2 marks)

(iv) Calculate the hire purchase price of the car.

(1 mark)

(c) The diagram below, **not drawn to scale**, shows two jars of peanuts butter of the same brand.



Which of the jars shown above is the BETTER buy?

Show all working to support your answer.

(3 marks)

Total of 14 marks

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5.

(a) A company pays its employees a basic wage of $9 .50 per hour for a 40-hour week.

(i) Calculate the basic weekly wage for ONE employee.

(1 mark)

Overtime is paid at a rate of time and a half.

(ii) Calculate the overtime wage for an employee who works 6 hours overtime in a certain week.

(2 marks)

In a certain week, the company paid its 30 employees a total of$12 084.00 in basic and overtime wages. Calculate for that week:

(iii) the TOTAL paid in overtime wages

(2 marks)

(iv) the TOTAL number of overtime hours worked by employees

(1 mark)

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(b) BDS$ means Barbados dollars and EC$ means Eastern Caribbean dollars.

(i) Karen exchanged BDS$2 000.00 and received EC$2 700.00. Calculate the value of one BDS$ in EC$.

(2 marks)

(iii) If Karen exchanged EC$432.00 for BDS$, calculate the amount of BDS$ which Karen would receive.

(2 marks)

[Assume that the buying and selling rates are the same.]

(c) A credit union pays 8% per annum compound-interest on all fixed deposits. A customer deposited $24 000 in an account. Calculate the compound interest earned at the end of three years.

(4 marks)

Total of 14 marks

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6. A vendor buys x kg of peanuts and y kg of cashew nuts.

(a) To get a good bargain, she must buy a minimum of 10 kg of peanuts and a minimum of 5 kg of cashew nuts.

Write **TWO** inequalities to satisfy these conditions.

(2 marks)

(b) She buys no more than 60 kg of nuts. Peanuts cost \$4.00 per kg and cashew nuts cost \$8.00 per kg and she spends at least \$200.

Write **TWO** inequalities to satisfy these conditions.

(2 marks)

(c) Using a scale of 2 cm to represent 10 kg on each axis, draw the graph of the four inequalities in (a) and (b).

(6 marks)

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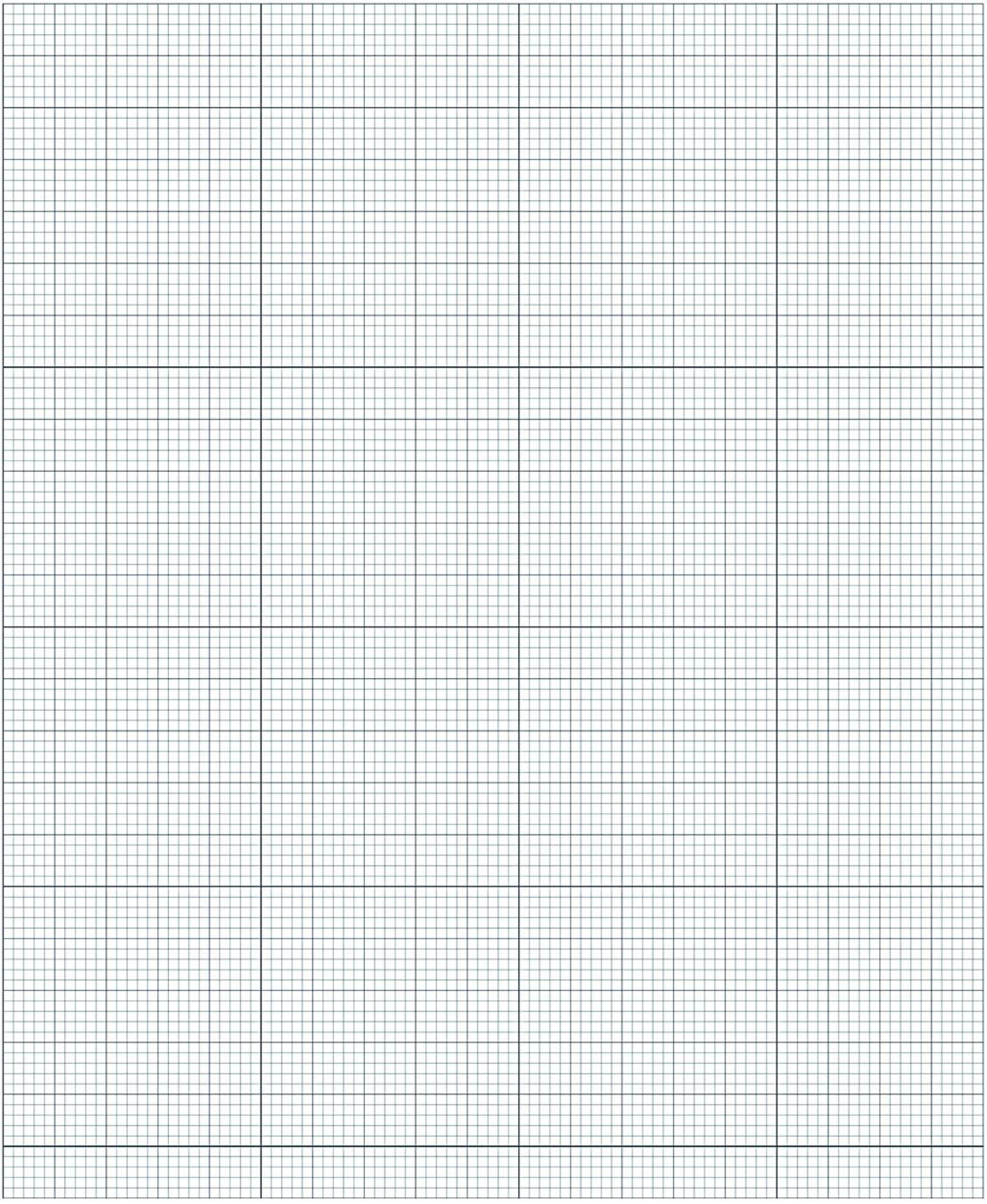

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(d) The profit on the sale of 1 kg of peanuts is \$2.00 and 1 kg of cashew nuts is \$5.00. Calculate the maximum profit.

(4 marks)

Total of 14 marks

THE END

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORKING ON THIS EXAMINATION