

Student's Name _____

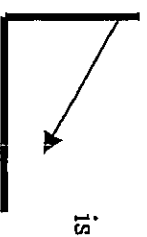
Instructions:

1. Circle your teacher's name
2. Answer all questions in the space provided on the exam paper.
3. Non-programmable, non-graphing calculators are permitted.
4. A formula sheet is provided for you to use.
5. Your clarity and correctness of expression will be taken into account in determining the final mark for this exam.

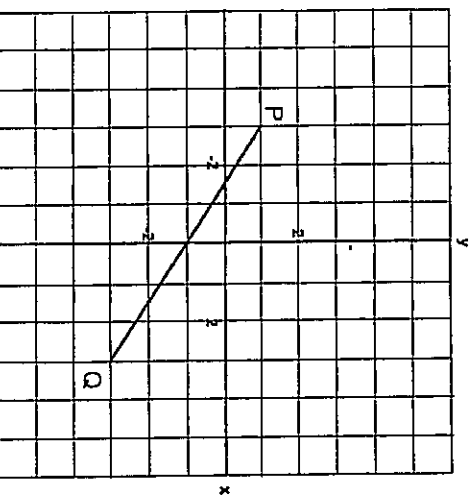
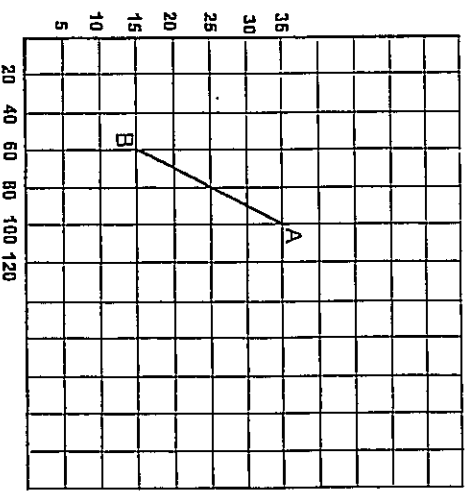
Marks:	_____ /44
Knowledge/Understanding	_____ /21
Application	_____ /11
Communication	_____ /11

PART A: MULTIPLE CHOICE [20 marks Knowledge/Understanding]**Circle the correct answer for each question. Spend approximately 15 minutes on this section.**

1. The value of $6 - 11 - (-8)$ is
A) -3 B) 3 C) 13 D) -13 E) None of these
2. The value of $(-2 - 5)(4 - 9)$ is
A) -35 B) -15 C) 15 D) 35 E) None of these
3. The value of $(-2)^3$ is
A) -6 B) $\frac{1}{8}$ C) -8 D) 8 E) Error
4. The value of 7^{-2} is
A) -14 B) $\frac{1}{49}$ C) -49 D) $\frac{1}{14}$ E) None of these
5. $(3^8)(3^4)$, expressed as a single power, is
A) 9^{12} B) 3^{32} C) 9^{32} D) 3^{12} E) None of these
6. $2^{50} \div 2^5$, expressed as a single power, is
A) 2^{10} B) 2^{45} C) 1^{10} D) 1^{45} E) None of these
7. $(6^{-2})^7$, expressed as a single power, is
A) 6^5 B) $(-12)^7$ C) 6^{-14} D) 6^{-128} E) None of these
8. 0.00479 , expressed in scientific notation, is
A) 4.79×10^{-3} B) 4.79×10^3 C) 479×10^{-5} D) 0.479×10^{-2} E) None of these
9. The mode of $11, 15, 6, 15, 9$ is
A) 11 B) 15 C) 6 D) 9 E) 11.2
10. The value of $12 - 5x$ if $x = -2$ is
A) 22 B) 2 C) -14 D) 5 E) None of these
11. The term that **is not** a like term to $-4x$ is
A) $5x^2$ B) $\frac{2}{3}x$ C) $-12x$ D) x E) None of these
12. The statement that best describes the relationship shown in the graph
A) a positive correlation, passing through the origin
B) a positive correlation, not passing through the origin
C) a negative correlation, passing through the origin
D) a negative correlation, not passing through the origin
E) no correlation



13. The charges to travel on the 407 toll road are a \$3.30 transponder fee plus \$0.20/km. The equation that represents the total charge is
 A) $C = 3.50k$ B) $C = 3.30k + 0.2$ C) $C = 3.30 + 0.20k$ D) $C = 3.30(0.20k)$ E) None of these
14. The slope of $y = 7x - 3$ is
 A) x B) -3 C) 7 D) 4 E) None of these
15. The equation of a line parallel to $y = \frac{1}{4}x - 8$ is
 A) $y = \frac{1}{4}x + 1$ B) $y = -\frac{3}{4}x + 2$ C) $y = 2x - 8$ D) $y = \frac{3}{4}x + 5$ E) None of these
16. The slope of a line perpendicular to $y = -\frac{3}{4}x + 4$ is
 A) $\frac{1}{4}$ B) -4 C) $\frac{3}{4}$ D) $-\frac{3}{4}$ E) $\frac{3}{2}$
17. The slope of AB is (Check the scale!)
 A) 2
 B) $\frac{1}{2}$
 C) 100
 D) 20
 E) None of these
18. The y-intercept of the line through P and Q is
 A) $-\frac{3}{2}$
 B) 1
 C) -1
 D) $-\frac{1}{2}$
 E) None of these
19. A rectangle has a perimeter of 400 metres. The maximum area that the rectangle could have is
 A) 400 m^2 B) $10\,000 \text{ m}^2$ C) 1800 m^2 D) $40\,000 \text{ m}^2$ E) None of these
20. The statement that is always true is
 A) The median of a triangle divides the area in half.
 B) An exterior angle of a triangle is obtuse.
 C) The altitude of a triangle is inside the triangle.
 D) The bisector of an angle is perpendicular to the opposite side.
 E) The diagonals of a parallelogram are equal in length.



PART B: Full solutions are required. Show all calculations, even if you use a calculator.

1. Mark keeps track of the number of hits he has when he plays baseball. In the first 7 games this season, he recorded the following number of hits

1 3 0 4 1 2 2

- a) He told his friend, Matthew, that his median number of hits is 4. You know that this is incorrect. What mistake did Mark make in calculating the median?

[1C]

- b) What is the correct median?

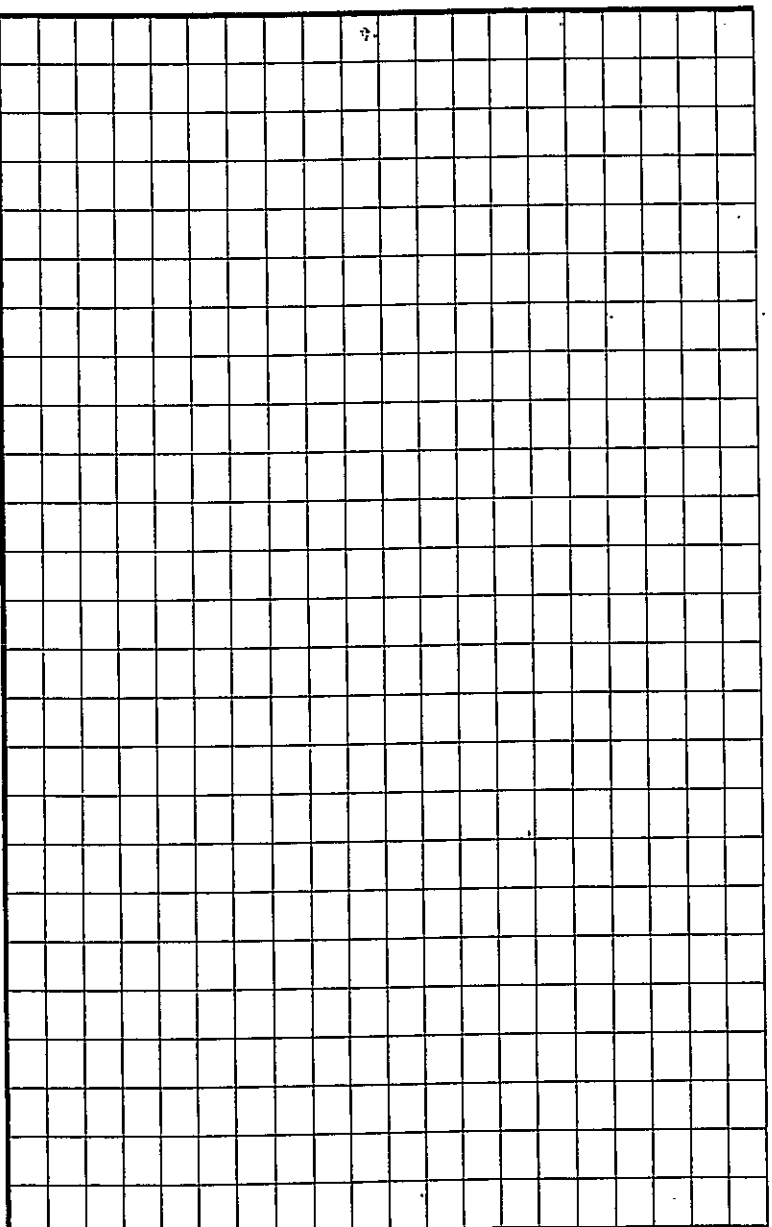
[1K]

2. Randy and Helene conducted an experiment. They measured the diameter and circumference of a number of circles. The results are recorded in the table below.

Diameter (cm)	3	4	5.5	7	8	10	12.5
Circumference (cm)	9.5	13	17	22	25	31	39

- a) Construct a scatterplot of the data and draw a line of best fit.

[3K]
[2C]



- b) Use the graph to answer the following:

- [2A] i) If the diameter is 9 cm, then the circumference is _____.
- ii) If the circumference is 35 cm, then the diameter is _____.

3. State whether or not each of the following represents a linear relation. Explain how you know.

[2K]
[2C]

a)

x	y
4	-1
8	2
12	5
16	8

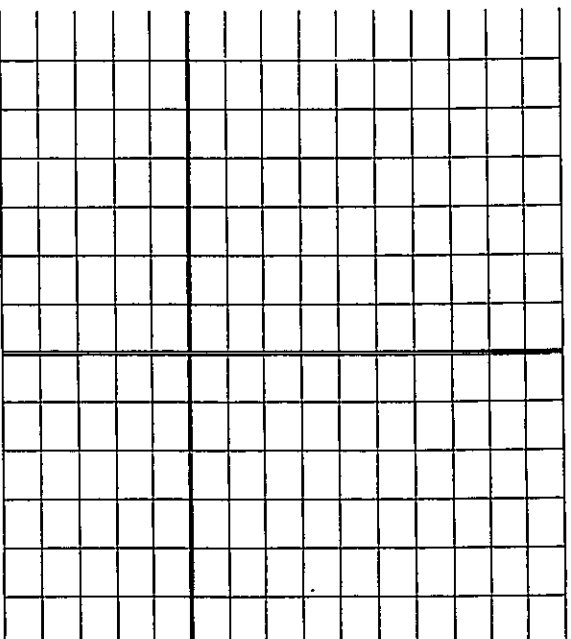
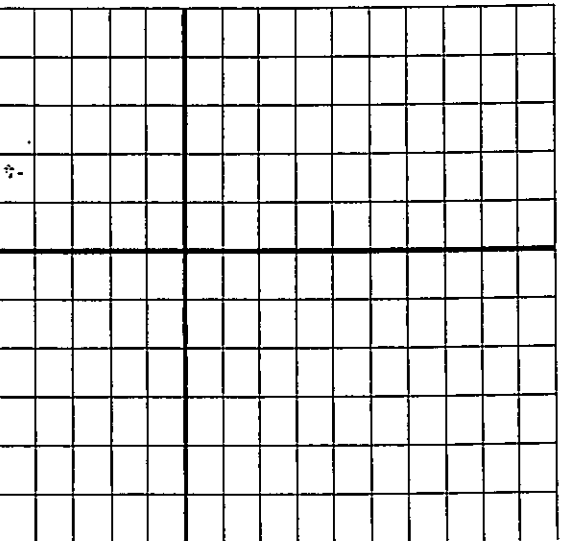
b) $y = 5x^2 - 1$

4. Graph:

a) the line with slope $-\frac{1}{2}$, passing through point $(-3,5)$

b) $y = 3x - 4$

[4A]
[1C]

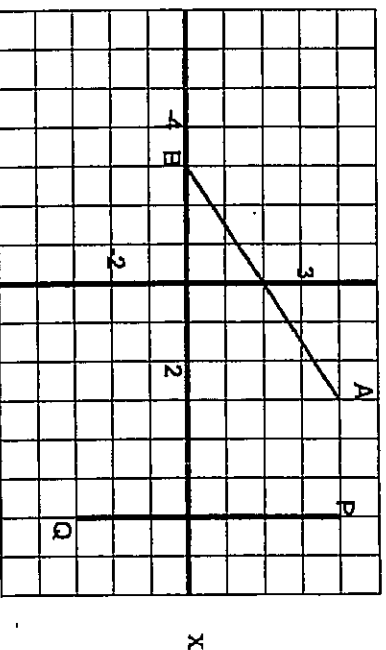


5. Write the equation of:

a) the line passing through A and B

[3A]

b) the line passing through P and Q



6. Simplify completely:

[7K]

a) $a^4 \div a^9 \times a^2$

b) $3k - 11y - 8k + 20y$

c) $4(2x^2 - 6x + 5)$

d) $3(2x - 7) - 2(8 - 5x)$

6. Solve:

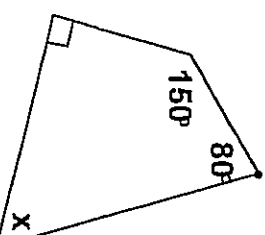
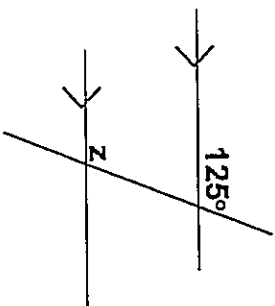
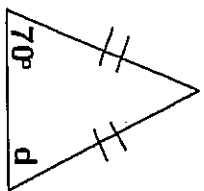
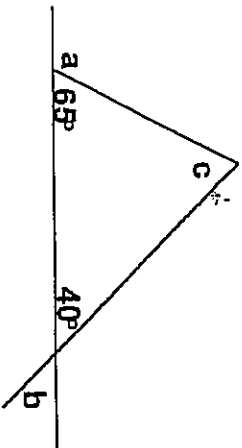
[5K]

a) $6x - 3 = 21$

b) $3x - 5 = 7x + 11$

7. Determine the value of the measure of each angle indicated.

[6K]

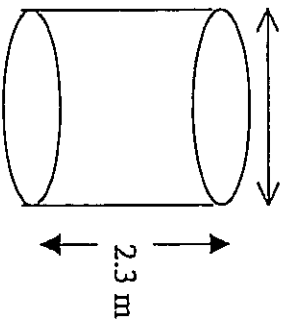


$a =$ _____ $b =$ _____ $c =$ _____ $d =$ _____ $z =$ _____ $x =$ _____

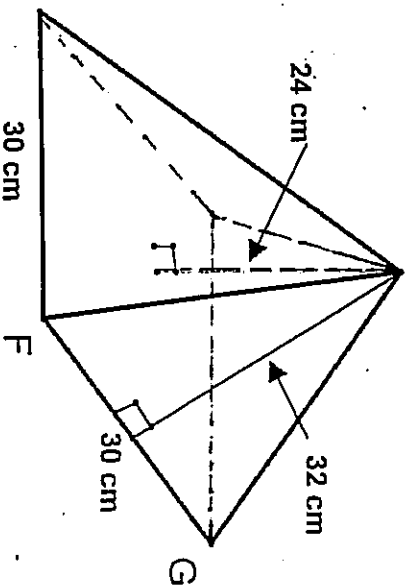
8. Determine the volume of each of the following:

1.6 m

[4A]
[1C]



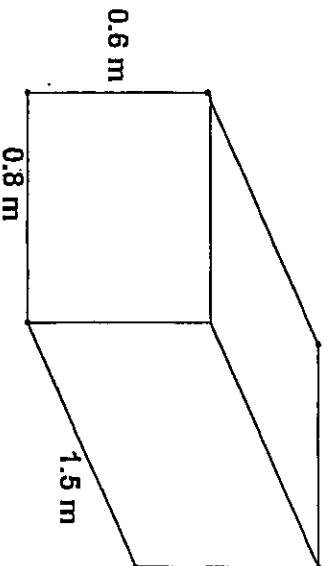
b)



9. Sami has purchased a storage box to sit on his deck. To protect it from the weather, he is going to paint the outside with a special coating.

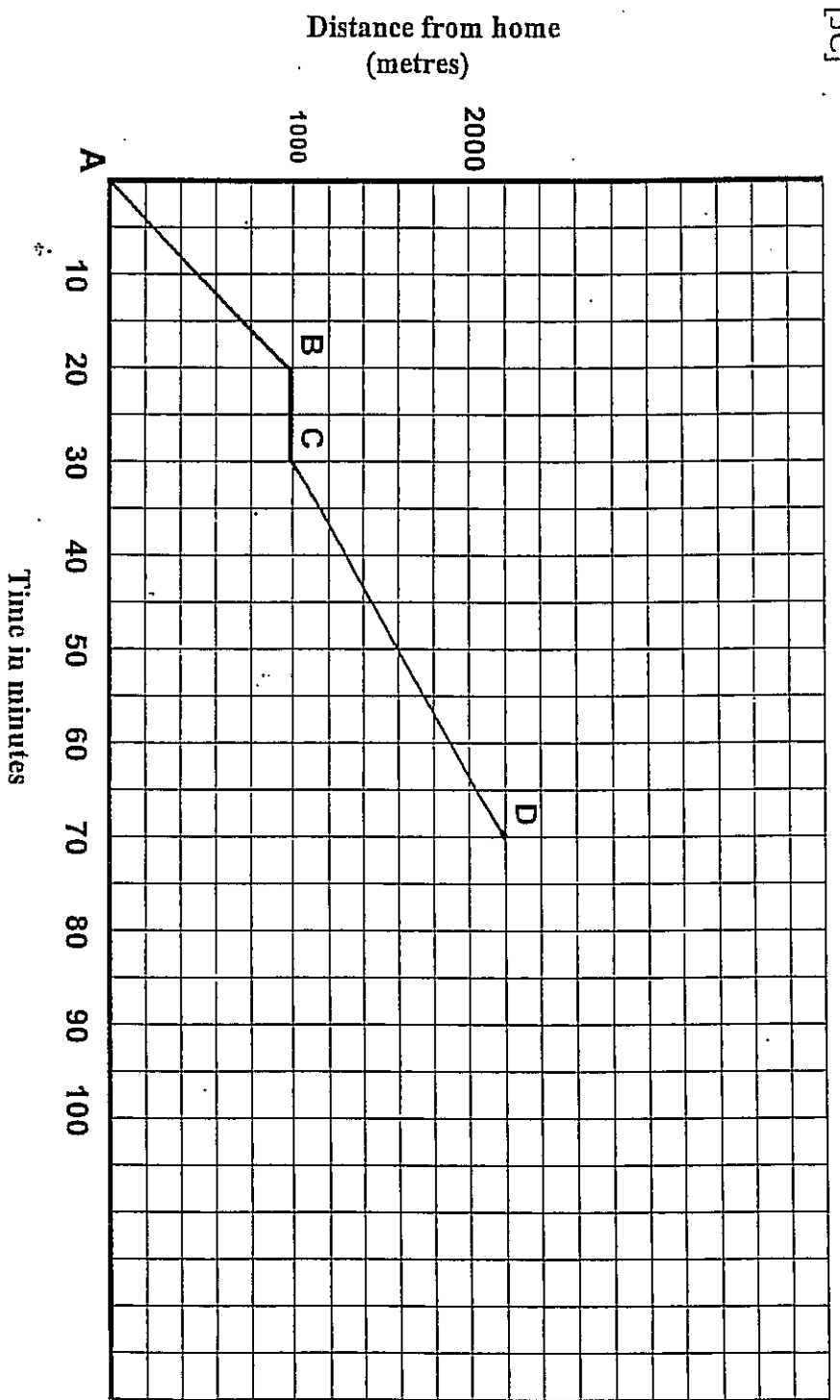
[4A]
[1C]

a) Calculate the surface area to be painted.



b) How many cans of coating will he need if each can will cover 2.4 m^2 ?

10. The following graph is a model of the distance Karen is from home when she went for a walk. [4A]
[3C]



- a) Calculate the rate at which she was walking from A to B.
- b) Describe what was happening between B and C.
- c) Was she going faster or slower from C to D compared to A to B? How does the graph tell you this?
- d) After she had been walking for the 70 minutes as shown on the graph, she returned home at a constant rate of 40 m/minute. Complete the graph to show her walk home.