

2014 YEAR 8 YEARLY EXAMINATION

Mathematics

| Name | *************************************** |
|---------|---|
| | |
| Teacher | |

General Instructions

- Working Time 70 MINUTES
- Write using a blue or black pen.
- Approved calculators may be used.
- Use pencil to draw or complete diagrams and graphs
- All necessary working should be shown for every question.

| Section 1 | 30 |
|-----------|----|
| Section 2 | 36 |
| Total | 66 |

Section One - Multiple choice questions

1. Out of the following, which is 15 more than twice x?

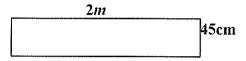
(A) x + 15

(B) 15x + 2

(C) 2x + 15

(D) 2x - 15

2. The area of this rectangle is



(A) 0.9 cm^2

(B) $0.9 m^2$

(C) 90 cm²

(D) 90 m^2

3. The ratio of boys to girls in a class is 3:2. Today there 12 boys in the class. Tomorrow 2 new boys will be enrolled.

The ratio of boys to girls will be

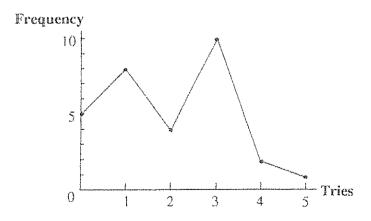
(A) 5:2

(B) 7:1

(C) 7:4

(D) 7:9

4. The graph below shows the number of tries scored by Year 8 rugby league team in a season



What is the total number of tries in the season?

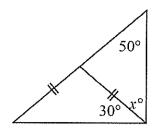
(A) 5

(B) 10

(C) 32

(D) 59

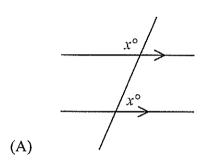
5. The value of x is



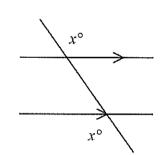
NOT TO SCALE

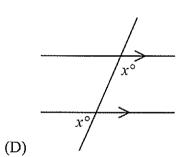
- (A) 50
- (B) 60
- (C) 65
- (D) 70

6. In which of the following would x be equal?



 $\begin{array}{c|c}
x^{\circ} \\
\hline
\end{array}$ (B)





7. $8w^{12} \div 2w^6$

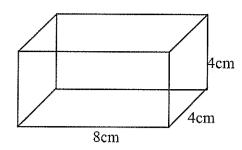
(C)

- (A) $6w^{12}$
- (B) $4w^6$

- (C) 6w³
- (D) $4w^3$

- 8. -4a + 6b + 2a b =
 - (A) -2a + 5b
- (B) -2a 5b
- (C) -6a + 5b
- (D) -6a 5b

9. A solid wooden block is in the shape of a rectangular prism with the dimensions shown



NOT TO SCALE

What is the surface area of this block?

- (A) $80 cm^2$
- (B) 96 *cm*²
- (C) $128 cm^2$
- (D) $160 cm^2$

10. On which line does the point (2,-3) lie?

- (A) y = x + 5
- (B) y = -2x + 1
- (C) x + y 1 = 0
- (D) 3x + 2y 12 = 0

11. The ratio of hens to baby chickens on a farm is 15:4





The ratio of baby chickens to eggs on the same farm is 6:5





What is the ratio of hens to eggs on this farm?

- (A) 9:2
- (B) 3:1
- (C) 25:8

(D) 2:1

12. Evaluate ab^2 given that a = 2 and b = -3

- (A) -36
- (B) -18
- (C) 18

(D) 36

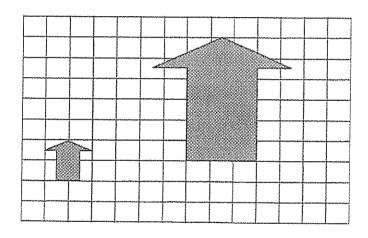
13. It takes 20 seconds to fill a litre bucket with water. What is the rate of flow in litres per hour?



- (A) 30
- (B) 180

- (C) 200
- (D) 1800

14. What is the scale of the enlargement used in the diagram?



- (A) 1:3
- (B) 1:2
- (C) 2:3

(D) 1:4

15. The median of this set of scores is

| Score | Frequency |
|-------|-----------|
| 1 | 8 |
| 2 | 5 |
| 3 | 5 |
| 4 | 3 |
| 5 | 3 |

- (A) 1
- (B) 2
- (C) 2.5

(D) 3

16. On a map, Sydney and Bathurst are 5cm apart.

If the distance between the two cities is 200 km, what is the scale of the map?

- (A) 1:40
- (B) 1:40000
- (C) 1:400000
- (D) 1:4000000

- 17. Solve the equation -3(m-2) = 18
 - (A) m = -8
- (B) $m = -\frac{16}{3}$
- (C) $m = -\frac{20}{3}$ (D) m = -4
- Nathan left on a journey at 11 am. He travelled 234 km and arrived at his destination at 18. 1:15pm.

What was his average speed for the journey, to the nearest kilometre per hour?

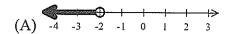
- (A)72
- (B) 74

- (C) 104
- (D) 109
- 19. For this set of scores, which of the following statements is correct?

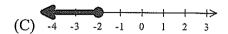
| Score | Frequency |
|-------|-----------|
| 5 | 3 |
| 6 | 1 |
| 7 | 2 |
| 8 | 7 |

- (A) There are 4 scores and their mean is 6.5
- (B) There are 4 scores and their mean is 7
- (C) There are 13 scores and their mean is 6.5
- (D) There are 13 scores and their mean is 7
- 20.

21. The graph that illustrates the solution of -4x > 8 is









- 22. What is the value of $\frac{3.7 + 6.2}{10.6 + 4.1}$ correct to 2 decimal places?
 - (A) 0.67
- (B) 4.12
- (C) 5.03
- (D) 8.38
- 23. Which of the following equations represent all the points that are four units to the left of the y-axis?
 - (A) y = 4
- (B) y = -4
- (C) x = 4
- (D) x = -4

- 24. $\left(\frac{2d}{e}\right)^3$
 - (A) $\frac{6d^3}{e}$
- (B) $\frac{6d^3}{a^3}$
- (C) $\frac{8d^3}{e}$
- (D) $\frac{8d^3}{e^3}$

- 25. The reciprocal of a is $\frac{1}{a}$ What is the reciprocal of 4^{-2} ?
 - (A) $\frac{1}{16}$
- (B) $\frac{1}{8}$
- (C) 8
- (D) 16

- 26. 3x (x 3y) =
 - (A) 2x 3y
- (B) 2x + 3y
- (C) 3 3y
- (D) 3 + 3y

27. What is the mean of this set of score?

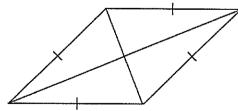
| Score x | Tally | Frequency f | $f \times x$ |
|---------|--|-------------|--------------|
| 1 | # # | 10 | 10 |
| 2 | #1 | 6 | 12 |
| 3 | many-many-many-many-many-many-many-many- | 2 | 6 |
| 4 | | 1 | 4 |
| 5 | | 3 | 15 |

- (A) $\frac{22}{5}$
- (B) $\frac{47}{5}$
- (C) $\frac{47}{15}$
- (D) $\frac{47}{22}$
- 28. A straight line was created using the following table of values.

| x | 0 | 1 | 2 | 3 |
|---|----|----|---|---|
| у | -4 | -2 | 0 | 2 |

What are the x- and y-intercepts for this line?

- (A) x-intercepts = -4,
- y-intercepts = 2
- (B) x-intercepts = 0,
- y-intercepts =0
- (C) x-intercepts = 2,
- y-intercepts =-4
- (D) x-intercepts = 3,
- y-intercepts =3
- 29. The rhombus has an area of 24cm².



NOT TO SCALE

What are possible lengths of the diagonals of the rhombus?

(A) 3 cm and 4cm

(B) 4 cm and 6cm

(C) 4 cm and 12 cm

(D) 8 cm and 12 cm

30. The survey of 200 students was taken to determine the main method of transport they use to get to school. The results appear in the table.

| Bus | 120 |
|-------|-----|
| Walk | 25 |
| Train | 40 |
| Car | 10 |
| Other | 5 |

These results are to be represented in a sector graph. What would be the correct angle size of the sector representing student who catch the train school?

- (A) 20°
- (B) 40°

- (C) 72°
- (D) 144°

End of Multiple Choice

Section 2

| | Question | Solution | |
|---|--|----------|--|
| 1 | Write the ratio 50ml:1L in simplest form | | (Second) |
| 2 | Solve $\frac{60 + x}{5} = 20$ | | ************************************* |
| 3 | What is the range of the numbers below? 5, -12, -10, 0, -6 | | The state of the s |
| 4 | The sand in the timer flows at a rate of 3mg every 2 seconds. At this rate, how long will it take the 15mg of sand to flow from the top to the bottom of the timer? | | 1 |
| 5 | The diagram shows a rhombus with one angle of 120° marked What is the size of the angle marked x in the diagram? | | 1 |

| 6 | James and Peter share \$500 so that James has \$120 more than Peter. What amount will James receive? | 1 |
|---|--|----|
| 7 | A farmer builds a fence around a section of land to enclose his animals B 28m C D What is the length (in metre) of the fence? | 1. |
| 8 | Find the value of x, giving reasons 25° x° | 2 |
| 9 | Solve for y: $\frac{4}{y+5} = 50$ | 1 |

| 10 | The cost of hiring party equipment from Jacko's Party Hire is given by the formula $$C = 90 + 15t$$ where 't' is the time in hours any equipment is hired for. What is the total cost of hiring party equipment from Friday 4:00pm until 2:00pm Saturday. | 1 |
|----|--|---|
| 11 | A paved section surrounding square garden has an area of $175m^2$. 20m What is the length (in metres) of one side of the garden? | Time to the state of the state |
| 12 | Expand $-x(x-5)$ | *************************************** |
| 13 | The dot plot shows the ages of a group of soccer players AGES What is the median age of the soccer players? | |

| Action of the Control | The diagram shows a dam on a country property. The dam is in the shape of a prism. The cross-section of the prism is a trapezium | | 3 |
|--|--|------|--|
| 14 | as shown. 64 m 4.5 m 52m a) Find the area of the shaded end. | a) | |
| | b) Find the capacity of the dam in kilolitres (kL), given $1 m^3 = 1 kL$ | b) | |
| | c) When full of water, the dam will provide irrigation for 63 days. Calculate the average quantity of water used per day. | c) - | A A A A MANAGEMENT AND A A A A A A A A A A A A A A A A A A |
| 15 | Simplify $-\frac{7w^5}{w^0}$ | | 1 |
| 16 | If it takes 176 palings to complete a 22 metre fence: a) How many palings will be needed for a 30m fence? | a) | 2 |
| | b) How long a fence could be erected with 124 palings? | b) | |

| 17 | The netball team had scored a mean of 18 goals per game after nine games. After the tenth game their mean was 18.7. How many goals did they score in their tenth game? | 1 |
|----|--|-------|
| 18 | The sum of 3 consecutive integers is 165. Find the first number. | Treed |
| 19 | What is the total surface area, in square units, of this rectangular prism? | 1 |
| 20 | Simplify $(4pq^3)^2$ | |

| | The graph records a baby's heartbeat. | 4 |
|----|---|---|
| 21 | a) What was the highest rate? b) When was the lowest rate recorded? c) What was the heartbeat at 10am? d) What rate was the heartbeat at the first test? d) | |
| 22 | Calculate the value for x and y . $ \begin{array}{cccccccccccccccccccccccccccccccccc$ | 2 |
| 23 | Solve $3(a+2)-2(a+1)=6$ | 1 |

| ļ | TT 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | T |
|----|--|-------------|---|
| 1 | The shape shown is folded along the dotted | | 1 |
| | line to form a box in the shape of a | | |
| | rectangular prism. All lengths are in | | |
| | centimetres. | | |
| | | | |
| | 3 | | |
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| | What is the volume of the box in cubic | | |
| | centimetres? | | |
| | centimetres? | | |
| | | | |
| | | | 1 |
| 20 | Factorise fully $15a^2b + 10ab^2$ | | |
| 26 | | | |
| | | | |
| | which the state of | | |
| | | | _ |
| | | | 3 |
| | Put a number in each box so that the data has | | 3 |
| | | | 3 |
| | the mode of 321, median of 319 and has a | | 3 |
| | | | 3 |
| | the mode of 321, median of 319 and has a | | 3 |
| | the mode of 321, median of 319 and has a range of 41 | | 3 |
| | the mode of 321, median of 319 and has a | | 3 |
| i | the mode of 321, median of 319 and has a range of 41 Stem Leaf | | 3 |
| | the mode of 321, median of 319 and has a range of 41 | | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf 29 5 8 | □ = O = | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf | | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf | □ = ○ = | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf | | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf | | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf | | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf | □ = ○ = △ = | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf | □ = ○= △= | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf | □ = ○ = △ = | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf | □ = ○ = △ = | 3 |
| 27 | the mode of 321, median of 319 and has a range of 41 Stem Leaf | □ = ○ = △ = | 3 |





SYDNEY TECHNICAL HIGH SCHOOL

MULTIPLE CHOICE ANSWER SHEET

| Name: | | •••• |
|----------|------|---------|
| Teacher: | | • • • • |

Completely fill the response oval representing the most correct answer.

Do not remove this sheet from the answer booklet.

| 1. | $A \bigcirc$ | В | c | D 🔾 | 16. | $A\bigcirc$ | В | c | D |
|-----|--------------|-----------------------|--------------|--------------|-----|--------------|---|----|--------------|
| 2. | $A\bigcirc$ | В | c | \circ | 17. | $A \bigcirc$ | В | c | D O |
| 3. | $A\bigcirc$ | В | c | \mathbf{D} | 18. | $A \bigcirc$ | В | c | D O |
| 4. | \mathbf{A} | В | c | \mathbf{D} | 19. | $A \bigcirc$ | В | c | D O |
| 5. | $A\bigcirc$ | \mathbf{B} | c | \mathbf{D} | 20. | $A \bigcirc$ | В | c | D O |
| 6. | $A\bigcirc$ | В | c | D 🔾 | 21. | $A \bigcirc$ | В | c | D O |
| 7. | $A\bigcirc$ | $\mathbf{B} \bigcirc$ | c | DO | 22. | $A \bigcirc$ | в | c | D O |
| 8. | $A \bigcirc$ | \mathbf{B} | c | D 🔾 | 23. | $A \bigcirc$ | В | c | D \bigcirc |
| 9. | $A \bigcirc$ | \mathbf{B} | c | \circ | 24. | $A \bigcirc$ | В | c | \mathbf{D} |
| 10. | $A \bigcirc$ | В | c | D O | 25. | $A \bigcirc$ | В | c | D O |
| 11. | $A \bigcirc$ | \mathbf{B} | c | \mathbf{D} | 26. | $A \bigcirc$ | В | c | \mathbf{D} |
| 12. | $A\bigcirc$ | \mathbf{B} | c | D 🔾 | 27. | $A \bigcirc$ | В | c | D O |
| 13. | $A \bigcirc$ | В | c | D 🔾 | 28. | $A\bigcirc$ | В | c | D O |
| 14. | $A \bigcirc$ | В | c | D O | 29. | $A\bigcirc$ | В | c | D \bigcirc |
| 15. | $A \bigcirc$ | В | $c \bigcirc$ | \mathbf{D} | 30. | \mathbf{A} | В | СО | D 🔾 |



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Mathematics

Name SOLUTIONS

Teacher

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| Total | Section 2 | Section 1 |
|-------|-----------|-----------|
| 66 | 36 | 30 |

Section One - Multiple choice questions

Out of the following, which is 15 more than twice x?

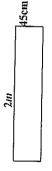
(A)
$$x + 15$$

(B)
$$15x + 2$$

(C)
$$2x + 15$$

(D)
$$2x - 15$$

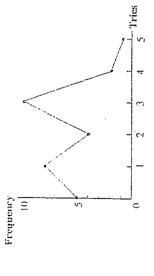
The area of this rectangle is



- (A) 0.9 cm^2
- (B) $0.9 \, m^2$ (C)
- (C) 90 cm² (D) 90 cm²
- 3. The ratio of boys to girls in a class is 3.2. Today there 12 boys in the class. Tomorrow 2 new boys will be enrolled.

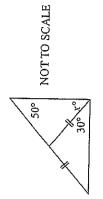
The ratio of boys to girls will be

- (A) 5:2
- (B) 7:1
- (C) 7:4
- (D) 7:9
- 4. The graph below shows the number of tries scored by Year 8 rugby league team in a season



- What is the total number of tries in the season?
- (A) 5
- (B) 10
- (C) 32
- (D) 59

The value of x is

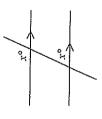


- (A) 50
- (B) 60
- (C) 65

(D) 70

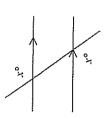
In which of the following would x be equal?

9



<u>B</u>

 $\overline{\mathbb{A}}$



Ũ

(D)

- 7. $8w^{12} \div 2w^6$
- (A) 6w¹²
- (B) 4110⁶
- (C) 611,3

(D) $4m^3$

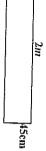
- 8. -4a + 6b + 2a b =
- (A) -2a + 5b
- (B) -2a-5b
- (D)
- -6a + 5b (D)

-6a - 5b

Section One - Multiple choice questions

- Out of the following, which is 15 more than twice χ ?
- (A) x + 15
- (B) 15x + 2
- (C) 2x + 15
- (D) 2x 15

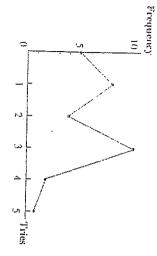
'n The area of this rectangle is



- (A) 0.9 cm^2
- (B) $0.9 m^2$
- (C) 90 cm²
- (D) 90 cm²
- Ç. The ratio of boys to girls in a class is 3:2. Today there 12 boys in the class. Tomorrow 2 new boys will be enrolled.

The ratio of boys to girls will be

- (A) 5:2
- (B) 7:1
- (C) 7:4
- (D) 7:9
- 4. The graph below shows the number of tries scored by Year 8 rugby league team in a season

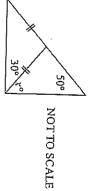


What is the total number of tries in the season?

- (A) 5
- (B) 10

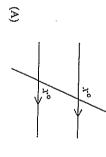
- (C) 32
- (D) 59

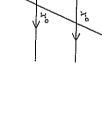
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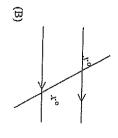


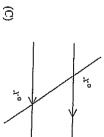
- (A) 50
- (B) 60

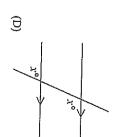
- (C) 65
- (D) 70
- In which of the following would x be equal?









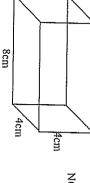


- 8w 2w 6
- (A) 6ην¹²
- (B) 4_ψ⁶
- (C) 6_W³
- (D) $4w^3$

- -4a + 6b + 2a b =
- (A) -2a + 5b
- (B) -2a 5b
- -6a + 5b
- (D) -6a 5b



9 A solid wooden block is in the shape of a rectangular prism with the dimensions shown



NOT TO SCALE

What is the surface area of this block?

- (A) 80 cm²
- $^{\mathbb{B}}$ 96 cm²
- 3

 $128 cm^2$

- (D) 160 cm²

- 10. On which line does the point (2,-3) lie?
- y=x+5
- y = -2x + 1
- x+y-1=0
- **EBOB** 3x + 2y - 12 = 0
- Ξ. The ratio of hens to baby chickens on a farm is 15:4





The ratio of baby chickens to eggs on the same farm is 6:5





What is the ratio of hens to eggs on this farm?

- (A) 9:2
 - (B) 3:1
- (C) 25:8
- (D) 2:1

Evaluate ab^2 given that a=2 and b=-3

12.

- (A) -36
- (B) -18

(C) 18

4

(D) 36

<u>(A</u>

13. It takes 20 seconds to fill a litre bucket with water. What is the rate of flow in litres per hour?



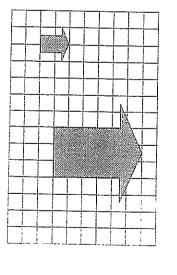
(A) 30

(B) 180

(C) 200

(D) 1800

14. What is the scale of the enlargement used in the diagram?



(A) 1:3

(B) 1:2

(C) 2:3

(D) 1:4

15. The median of this set of scores is

| 0 | | | | | | |
|---------|---|---|---|---|----|-----------|
| (B) 2 | | | | | | |
| | 5 | 4 | 3 | 2 | _ | Score |
| (C) 2.5 | 3 | 3 | 5 | 5 | 89 | Frequency |
| | | | | | | _ |
| (D) 3 | | | | | | |

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On a map, Sydney and Bathurst are 5cm apart. 16.

If the distance between the two cities is 200 km, what is the scale of the map?

- (A) 1:40
- (B) 1:40000
- (C) 1:400000
- (D) 1:4000000

- Solve the equation -3(m-2) = 1817.
- (A) m = -8
- (B) $m = -\frac{16}{3}$
- (C) $m = -\frac{20}{3}$
- (D) m=4
- Nathan left on a journey at 11 am. He travelled 234 km and arrived at his destination at

38

- What was his average speed for the journey, to the nearest kilometre per hour? (A) 72
 - (B) 74
- For this set of scores, which of the following statements is correct? 19.

| Frequency | m | | 2 | 7 |
|-----------|---|---|---|---|
| Score | 5 | 9 | 7 | 8 |

- (A) There are 4 scores and their mean is 6.5
- (B) There are 4 scores and their mean is 7
- (C) There are 13 scores and their mean is 6.5
- (D) There are 13 scores and their mean is 7
- $\frac{b}{3} \div \frac{2a}{5} =$ (A) $\frac{5b}{6a}$ 20.
- (B) $\frac{6a}{5b}$
- (C) $\frac{2ab}{15}$
- (D) $\frac{15}{2ab}$

The graph that illustrates the solution of -4x > 8 is 21.

(A) -4 -3 -2 -1 0 1 2 3





- What is the value of $\frac{3.7+6.2}{10.6+4.1}$ correct to 2 decimal places? 22.
- (C) 5.03
- (D) 8.38
- (B) 4.12 (A) 0.67
- (C) x = 4(B) y = .4

(A) y = 4

23

Which of the following equations represent all the points that are four units to the left of the y-axis?

- $\left(\frac{2d}{e}\right)^3$ 24.
- (A) $\frac{6d^3}{e}$
- (B) $\frac{6d^3}{e^3}$
- (C) $\frac{8d}{e}$
- (D) $\frac{8d^3}{e^3}$

The reciprocal of a is -25.

What is the reciprocal of 4-2?

- (A) $\frac{1}{16}$
- (B) 1/8
- (C) 8
- (D) 16

- 3x (x 3y) =26.
- (A) 2x 3y
- (B) 2x + 3y
- (C) 3-3y
- (D) 3 + 3y

16. On a map, Sydney and Bathurst are 5cm apart.

If the distance between the two cities is 200 km, what is the scale of the map?

- (A) 1:40
- (B) 1:40000
- (C) 1:400000
- (D) 1:4000000

- 7. Solve the equation -3(m-2) = 18
- (A) m = -8
- (B) $m = -\frac{16}{3}$
- (C) $m = -\frac{20}{3}$
- (D) m = -4
- ₹0. Nathan left on a journey at 11 am. He travelled 234 km and arrived at his destination at

What was his average speed for the journey, to the nearest kilometre per hour?

- (A) 72
- (B) 74
- (C) 104
- (D) 109
- 19. For this set of scores, which of the following statements is correct?

| ∞ | 7 | 6 | 5 | Score |
|----------|---|---|---|-----------|
| 7 | 2 | - | ω | Frequency |

- (A) There are 4 scores and their mean is 6.5
- (B) There are 4 scores and their mean is 7
- (C) There are 13 scores and their mean is 6.5
- (D) There are 13 scores and their mean is 7
- 20. $\frac{b}{3} \div \frac{2a}{5} =$ (A) $\frac{5b}{6a}$ (B) $\frac{6a}{5b}$ (C) $\frac{2ab}{15}$ (D) $\frac{15}{2ab}$

21. The graph that illustrates the solution of -4x > 8 is

- (B) -4 -3 -2 -1 0 1 2 3
- (C) -4 -3 -2 -1 0 | 2 3
- (D) -4 -3 -2 -1 0 1 2 3
- 22. What is the value of $\frac{3.7 + 6.2}{10.6 + 4.1}$ correct to 2 decimal places?
- (A) 0.67
- (B) 4.12
- (C) 5.03

(D) 8.38

- 23. Which of the following equations represent all the points that are four units to the left of the y-axis?
- (A) y = 4
- (B) y = .4
- (C) x = 4

(D) x = -4

- 24. $\left(\frac{2d}{e}\right)^3$
- (A) $\frac{6d^3}{e}$
- (B) $\frac{6d^3}{e^3}$
- (C) $\frac{8d^3}{e}$
- (D) $\frac{8d^3}{e^3}$

- 25. The reciprocal of a is $\frac{1}{a}$ What is the reciprocal of 4^{-2} ?
- (A) $\frac{1}{16}$
- (B) ¹/₈

(D) 16

(C) 8

- 26. 3x - (x - 3y) =
- (A) 2x 3y
- (B) 2x + 3y
- (C) 3 3y
- ر(D) 3 + 3y



What is the mean of this set of score? 27.

| $f \times x$ | 10 | 12 | 9 | 4 | 15 |
|---------------|----|--------|---|---|----|
| Frequency f | 10 | 9 | 2 | | 33 |
| Tally | 差 | — 美 | | _ | = |
| Score | | 2 | 3 | 4 | 5 |

(A) $\frac{22}{5}$

5 (B)

(C) $\frac{47}{15}$

47 8

> A straight line was created using the following table of values. 28.

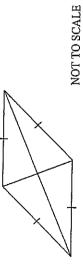
| 3 | 2 | |
|---|----|--|
| 2 | 0 | |
| | -2 | |
| 0 | 4- | |
| × | ų | |

What are the x- and y-intercepts for this line?

- (A) x-intercepts = -4,
- y-intercepts =2 y-intercepts =0 (B) x-intercepts = 0,
 - (C) x-intercepts = 2,
- y-intercepts ≔-4
 - (D) x-intercepts = 3,

y-intercepts =3

The rhombus has an area of $24\,\mathrm{cm}^2$. 29.



What are possible lengths of the diagonals of the rhombus?

- (A) 3 cm and 4cm
- (B) 4 cm and 6cm
 - (C) 4 cm and 12 cm
- (D) 8 cm and 12 cm

The survey of 200 students was taken to determine the main method of transport they use to get to school. The results appear in the table. 30.

| 120 | 25 | 40 | 0. | 5 |
|-----|------|-------|-----|-------|
| Eus | Walk | Train | Car | Other |

These results are to be represented in a sector graph. What would be the correct angle size of the sector representing student who catch the train school?

- (A) 20°
- 40° (B)
- 75° <u></u>

144° 9

End of Multiple Choice

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Section 2

| | - | - | , — | | · |
|----------|--|-------------------------------|--|--|---|
| Solution | 1,30 | 26 40 | 512 | 10 seconds | L = 30° |
| Question | Write the ratio 50ml:1L in simplest form | Solve $\frac{60 + x}{5} = 20$ | What is the range of the numbers below? 5, -12, -10, 0, -6 | The sand in the timer flows at a rate of 3mg every 2 seconds. At this rate, how long will it take the 15mg of sand to flow from the top to the bottom of the timer? | The diagram shows a rhombus with one angle of 120° marked $120^{\circ} \text{ marked}$ $120^{\circ} x^{\circ}$ What is the size of the angle marked x in the diagram? |
| | | 7 | co. | 4 | vo |

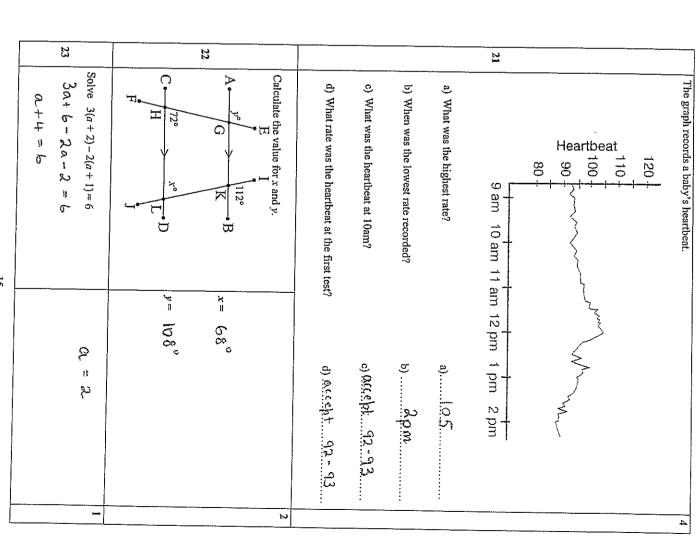
| 1==1 | yest . | 72 | - |
|---|--|--|---|
| James recives 190 190 | 28 28 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 | 25 - 25 | 4= -123 or -423 |
| James and refer snare \$500 so that James has \$120 more than Peter. What amount will James receive? $ \begin{array}{l} (3.4 + 12.0) & 12.4 & 5.0.0 \\ 30.4 & 12.0 & 12.0 & 5.0.0 \end{array} $ $ \begin{array}{l} 30.4 & 12.0 & 3.4 & 3.4 \end{array} $ $ \begin{array}{l} 30.4 & 12.0 & 3.4 \end{array} $ $ \begin{array}{l} 30.4 & 12.0 & 3.4 \end{array} $ $ \begin{array}{l} 30.4 & 12.0 & 3.4 \end{array} $ | A farmer builds a fence around a section of land to enclose his animals 20m B 20m S A C C D What is the length (in metre) of the fence? | Find the value of x , giving reasons $\frac{25^{\circ}}{25^{\circ}}$ | Solve for y: $\frac{4}{y+5} = 50$ $4 = 50 (y - 15)$ $4 = 50y + 250$ $-2y = 50y$ $-3y = 50y$ |
| ٥ | | es | 6 |



| - | | 1 | |
|--|--|------------------|--|
| C=90+156 E=22 C=90+15×22 =\$4.20 | 20×10 - 12 = 175 200 - 12 = 175 12 = 25 1 = 5 | - x²+ 5× | 2) |
| The cost of hiring party equipment from Jacko's Party Hire is given by the formula \$C = 90 + 15t where 't' is the time in hours any equipment is hired for. What is the total cost of hiring party equipment from Friday 4:00pm until 2:00pm Saturday. | A paved section surrounding square garden has an area of 175m ² . | Expand $-x(x-5)$ | The dot plot shows the ages of a group of soccer players |
| 70 | Ħ | 12 | 13 |

| Е. | | | | | 7 | |
|--|--|--|---|----------------------------------|---|---|
| | 4.5 (64+52) = 261 m2 | b) 261×140 = 36540 36540 kL | 0 36540 KL for 63days 580 KL/day | - 7w 5 | 8x30 = 240 palingo | 124 = 8 = 15.5 metro |
| the diagram shows a dam on a country property. The dam is in the shape of a prism. The cross-section of the prism is a trapezium as shown. | 4.5 m 64 m 140 m s2m a) Find the area of the shaded end. | b) Find the capacity of the dam in kilolitres (kL), given $1 m^3 = 1 kL$ | c) When full of water, the dam will provide irrigation for 63 days. Calculate the average quantity of water used per day. | Simplify $-\frac{7\mu^5}{\mu^0}$ | If it takes 176 palings to complete a 22 metre fence: a) How many palings will be needed for a 30m fence? 8 pallings palmanatives | b) How long a fence could be erected b) with 124 palings? |
| | | 4 | | 15 | 91 | |

| 20 | 19 | | 17 |
|---------------------------------|--|---|--|
| Simplify $\left(4pq^3\right)^2$ | What is the total surface area, in square units, of this rectangular prism? | The sum of 3 consecutive integers is 165. Find the first number. | The netball team had scored a mean of 18 goals per game after nine games. After the tenth game their mean was 18.7. How many goals did they score in their tenth game? |
| 16p2q6 | axaaxa = 4a² daxhxa = Aah axhxa = 2ah + Surface Arrea = 4a²+ 6ah | x + (x+1) + (x+2) = 165 $3x + 3 = 165$ $3x = 162$ $x = 54$ | $\frac{162+22}{10} = 18.7$ $\frac{162+22}{2} = 18.7$ $\frac{162+22}{2} = 25$ |
| >= | — | — | |



| | | | | | | 8 | |
|--|----------------------------------|-------------------------------|---------------------------------------|------------------------------------|---|---|---|
| 120 - Heartbeai 100 - Heartbeai 80 - | 9 am 10 am 11 am 12 pm 1 pm 2 pm | a) What was the highest rate? | b) When was the lowest rate recorded? | c) What was the heartbeat at 10am? | d) What rate was the heartbeat at the first test? d) のにくられた 92、93 | Calculate the value for x and y. A y^{o} | Solve 3(a+2)-2(a+1)=6 3a+6-2a-2=6 a+4=6 |
| | 21 | | | | **** | 22 | 23 |

| | н | - | - |
|--|--|--|---------------------------------|
| 162.136 = 18.7 162.136 = 18.7 162.136 = 187 3 = 25 | x + (x+1) + (x+2) = 165 3x + 3 = 165 3x = 162 x = 54 | axaaxa = 4az daxhxa = 4ah axhxz = aah + Sufare Area = 4a²+ 6ah | 16p2g6 |
| The netball team had scored a mean of 18 goals per game after nine games. After the tenth game their mean was 18.7. How many goals did they score in their tenth game? | The sum of 3 consecutive integers is 165. Find the first number. | What is the total surface area, in square units, of this rectangular prism? A A A A A A A A A A A A A | Simplify $\left(4pq^3\right)^2$ |
| 7 | CO 1744 | 19 | 20 |



| H | | | | | - | | | |
|--|--------------------|-----------------------------------|--|-----------------------------------|--|---|----------------------------------|-------------------------------------|
| | V=3×2×6 1 36cm3 | | | 5ab (3a+2b) | . 8 = | O | \(\rangle \) | |
| The shape shown is folded along the dotted line to form a box in the shape of a rectangular prism. All lengths are in centimetres. | 6 6 | What is the volume of the leaf is | viat is use voluite of the box in cubic centimetres? | Factorise fully $15a^2b + 10ab^2$ | Put a number in each box so that the data has the mode of 321, median of 319 and has a range of 41 | Stem Leaf 29 5 30 9 | 31 6 6 8 32 0 1 1 0 | $33 33 \triangle$ $2x + 3x = 319$ |
| L., | 22 | | | 26 | | 27 | | |

End of Examination



SADNEX LECHNICYT HICH SCHOOL



MOLLIBLE CHOICE ANSWER SHEET

| | Теасћет: |
|--------------|----------|
| 2 MOIT V-102 | : əmsV |

Completely fill the response oval representing the most correct answer.

Do not remove this sheet from the answer booklet.

| $D\bigcirc$ | © O | $\bigcirc \ \mathbf{B} \bigcirc$ | \bigcirc \blacksquare | .0£ | | \bigcirc \mathfrak{a} | \circ | B | $\bigcirc V$ | 'SI |
|---------------------------|---------------------------|----------------------------------|---------------------------|------|---|---------------------------|---------------------------|-----------------------|----------------------|-------------|
| \bigcirc \mathfrak{a} | ©) | \bigcirc 8 | \bigcirc \forall | .62 | | \bigcirc \mathfrak{a} | \circ | ○ a | \bigcirc \forall | ' †I |
| $\bigcirc \mathfrak{a}$ | C (C | \bigcirc 8 | $\bigcirc \Psi$ | .82 | , | \bigcirc \mathfrak{a} | \bigcirc 3 | B 🔘 | $\bigcirc V$ | .51 |
| O a | \bigcirc 3 | \triangleright B | $\bigcirc V$ | ·72 | | \bigcirc \mathfrak{a} | © 3 | $\mathbf{B} \bigcirc$ | $\bigcirc \Psi$ | 17. |
| \bigcirc \mathfrak{a} | \bigcirc \mathfrak{I} | B 🌑 | $\bigcirc V$ | .92 | | \bigcirc \mathfrak{a} | \bigcirc \mathfrak{I} | \triangleright | \bigcirc \forall | .ii. |
| D 🕲 | \bigcirc \mathbf{j} | \bigcirc 8 | $\bigcirc V$ | .25. | | DC | \bigcirc 0 | B 🕲 | $\bigcirc \Psi$ | .01 |
| D 🕲 | \bigcirc 3 | \bigcirc 8 | \bigcirc A | 74. | | D | \bigcirc \bigcirc | \bigcirc 8 | $\bigcirc V$ | .6 |
| D | \bigcirc \bigcirc | ○ a | \bigcirc \forall | .52 | | DC | \bigcirc \bigcirc | ○ a | \bigcirc \forall | .8 |
| $\bigcirc \mathfrak{a}$ | \bigcirc 3 | ○ a | ● ¥ | .22. | | \mathcal{D} | \bigcirc 3 | B @ | $\bigcirc V$ | ٠. |
| $\bigcirc \mathfrak{a}$ | \bigcirc 3 | \bigcirc 8 | \bigcirc \forall | .12 | | DC | C | B | $\bigcirc V$ | .9 |
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| D 🕲 | \bigcirc \mathfrak{I} | \bigcirc 8 | \bigcirc V | .61 | • | D @ | \bigcirc \mathfrak{I} | \bigcirc 8 | \bigcirc V | ·þ |
| $\bigcirc \mathfrak{a}$ | C | \bigcirc 8 | \bigcirc \forall | .81 | (| ⊃a | © 3 | \bigcirc 8 | \bigcirc \forall | 3. |
| D @ | \bigcirc \bigcirc | \bigcirc 8 | ○¥ | .71 | | DC | \bigcirc \bigcirc | B @ | \bigcirc V | 7. |
| - CT | | | | | | | | | | |

