SYDNEY TECHNICAL HIGH SCHOOL

(Celebrating 100 Years of Public Education)

YEAR 7

TERM 3 ASSESSMENT TASK

2011

Mathematics

General Instuctions

- Working time - 65 minutes
- Write using black or blue pen
- All necessary working should be shown in every question
- All questions are of equal value
- Diagrams are not drawn to scale
- Total marks - 60

Section 1 - 35 minutes

- Calculators are not to be used
- Answer questions in the space provided
- Select the alternative A, B, C or D that best answers the question and fill in the response oval on the answer sheet.

Section 2 - 30 minutes

- Calculators are not to be used
- Time allowed for this section is 30 minutes

Name : FILE

Teacher : _____

Section 1	Section 2	Total

Name:----------

Teacher:----------

SYDNEY TECHNICAL HIGH SCHOOL

YEAR 7 YEARLY EXAMINATION 2011

MATHEMATICS

Paper A

SECTION 1 Multiple Choice (30 marks)

1 6·8 million is the same as

(A) 680 000 (B) 6 080 000 (C) 6 800 000 (D) 68 000 000

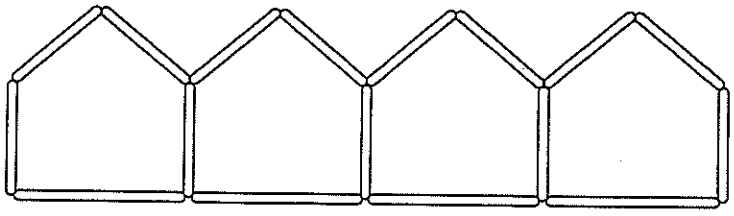
2 $\frac{6+12}{6-3} =$

(A) 0 (B) 5 (C) 6 (D) 10

3 Mohamed buys a hamburger for \$2·45, two cups of fries at \$1·05 each and a drink for \$1·35. His change from \$10 is

(A) \$4·10 (B) \$4·85 (C) \$5·15 (D) \$5·90

4 Sticks are used to make this pattern of pentagons.



In this pattern the rule for the number of sticks is

(A) 5 × number of pentagons.
(B) 4 × number of pentagons.
(C) 5 × number of pentagons – 1.
(D) 4 × number of pentagons + 1.

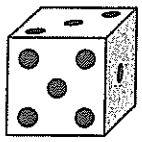
5 Which of these expressions is equivalent to $3mn^2$?

(A) $3 \times m \times n \times n$ (B) $3 \times m \times n \times 2$

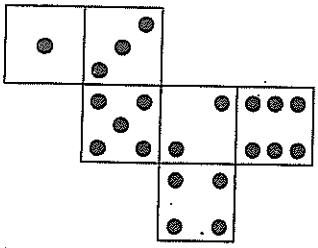
(C) $3 \times m \times n \times m \times n$ (D) $3 \times m \times n \times 3 \times m \times n$

6

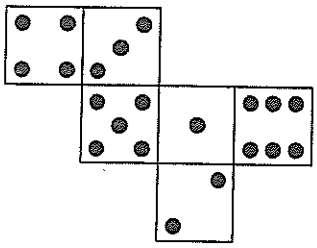
Opposite faces on a standard die always add up to 7.



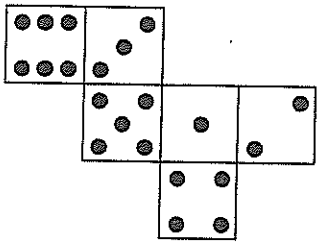
Which is a correct net for a standard die?



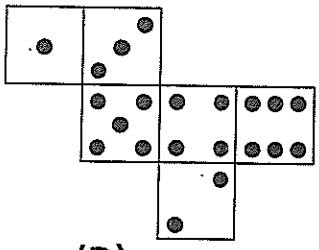
(A)



(B)



(C)



(D)

7

Which expression does NOT equal $2a$?

(A) $a \times a$ (B) $2 \times a$ (C) $3a - a$ (D) $a + a$

8

Which fraction is halfway between $\frac{1}{3}$ and $\frac{1}{5}$?

(A) $\frac{1}{8}$ (B) $\frac{1}{4}$ (C) $\frac{4}{15}$ (D) $\frac{8}{15}$

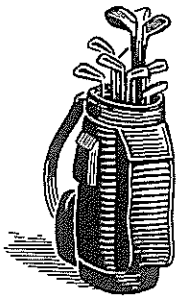
9

A 250-gram block of Dairy Milk Chocolate has 60 pieces. It can be shared evenly between the following number of people:

(A) 2, 5, 7 **(B)** 3, 5, 9 **(C)** 2, 5, 11 **(D)** 3, 5, 12

10

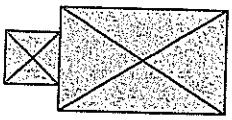
There are 9 golf clubs in the bag below; 6 are called 'irons' and 3 are called 'woods'.



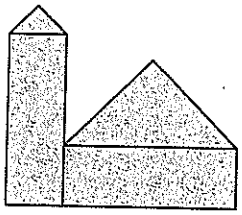
What *percentage* of the clubs in the bag are 'woods'?

(A) 33.3 (B) 50 (C) 66.67 (D) 11.11

11 The top view and front view of a building are shown.

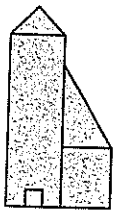


Top view

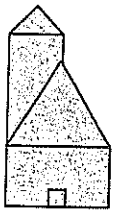


Front view

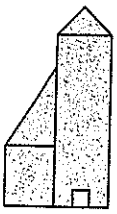
Which could be the side view of this building?



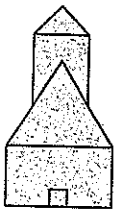
(A)



(B)



(C)



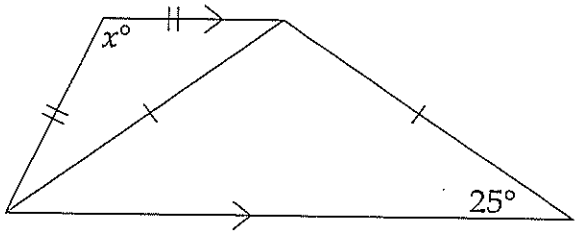
(D)

12 A rectangle is shown.

What is the value of x?

(A) 5 (B) 6 (C) 9 (D) 15

13



NOT TO SCALE

What is the value of x?

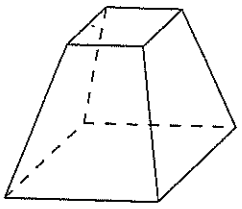
(A) 130 (B) 140 (C) 150 (D) 155

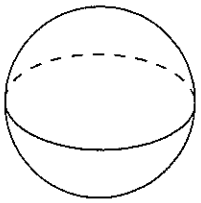
14 The average weight of 10 people is 74 kg.

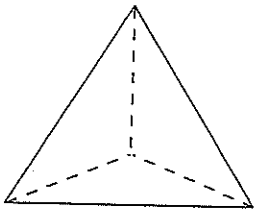
If 4 of them weigh 80 kg each, what is the average weight of the remaining 6 people?

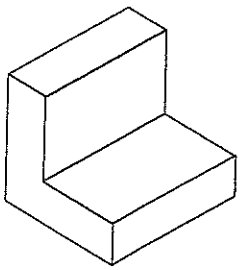
(A) 42 kg (B) 68 kg (C) 70 kg (D) 77 kg

15 Which of these solids is a prism?

(A) 

(B) 

(C) 

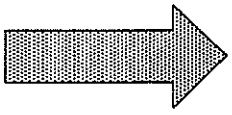
(D) 

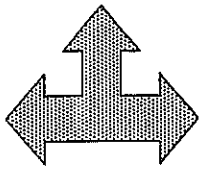
16 Zoe bought a bike on sale at 15% off the original price.
The original price was $420.

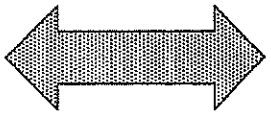
How much did Zoe pay for the bike?

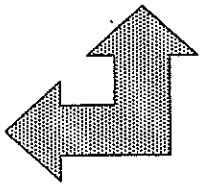
$63	$357	$378	$405
(A)	**(B)**	**(C)**	**(D)**

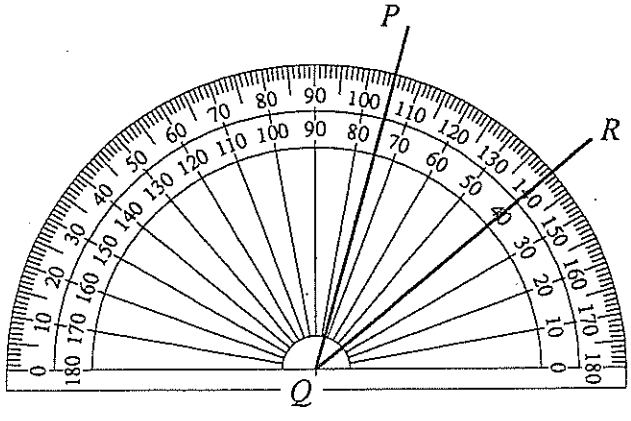
17 Which of the shapes below has *more than one* axis of symmetry?

(A) 

(C) 

(B) 

(D) 

18 

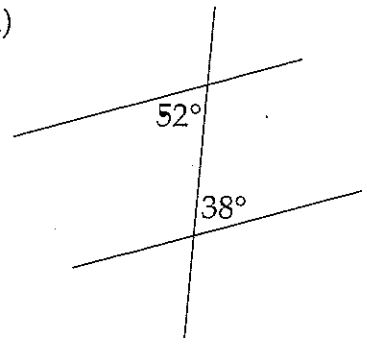
The size of angle PQR is

(A) 25° (B) 35° (C) 45° (D) 65°

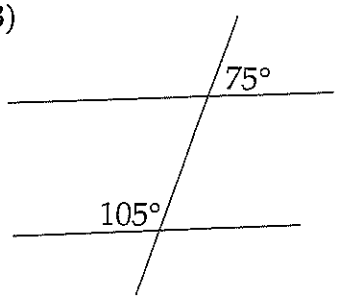
19 —8 diagrams show pairs of lines being cut by a transversal.

Which diagram shows a pair of lines that MUST be parallel?

(A)

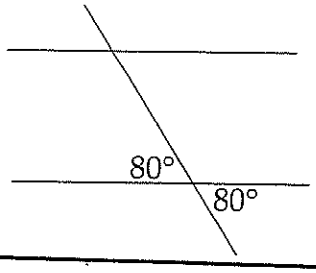


(B)

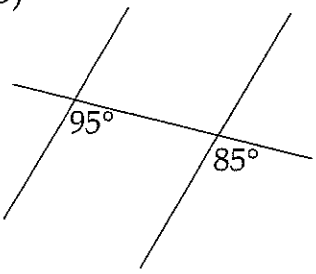


ALL DIAGRAMS NOT TO SCALE

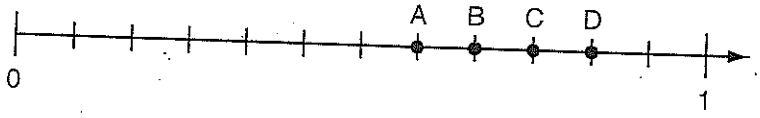
(C)



(D)

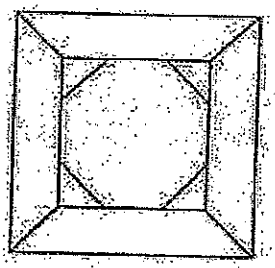


20 Which position is closest to $\frac{2}{3}$ on this number line?



(A) (B) (C) (D)

21

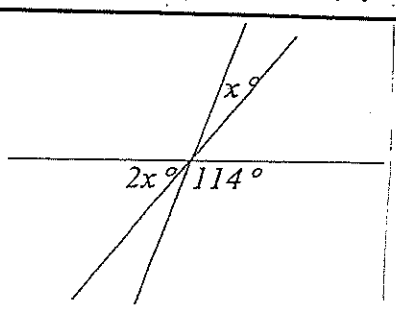


The diagram shows the pattern on a bathroom tile. Which shape is NOT used in this pattern?

(A) hexagon (B) octagon (C) trapezium (D) triangle

22 What is the value of x in the figure

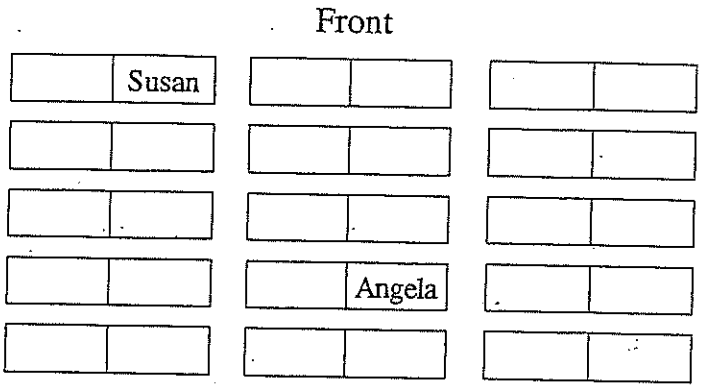
(A) 114
(B) 34
(C) 22
(D) 28



23 0·032 kg =

(A) 0·32 g (B) 3·2 g (C) 32 g (D) 320 g

24



The classroom is arranged for students to work at pairs of desks in 5 rows.

Angela has been told to move to the desk next to Susan's.

Which one of the following paths will get her there?

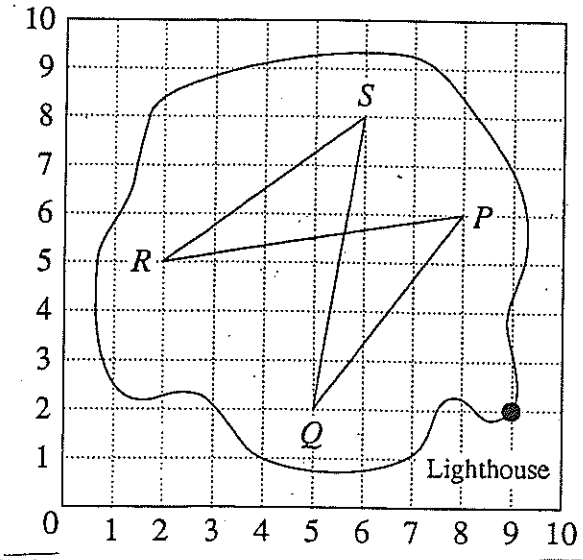
(A) Back 1 row, left 3 desks, forward 4 rows.

(B) Forward 2 rows, left 3 desks, forward 1 row.

(C) Left 1 desk, back 3 rows, right 3 desks.

(D) Right 2 desks, back 3 rows, left 5 desks.

25



A lighthouse on a small island is located at (9, 2).

A runway is to be built on the island between the points (2, 5) and (8, 6).

The correct position of the runway is

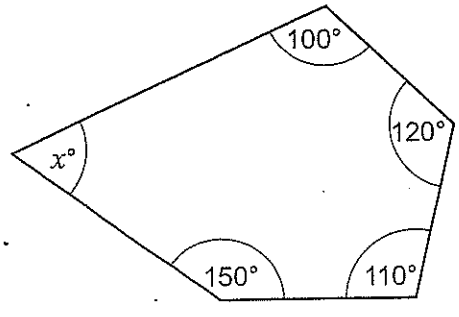
(A) RP

(B) RS

(C) QP

(D) QS

26

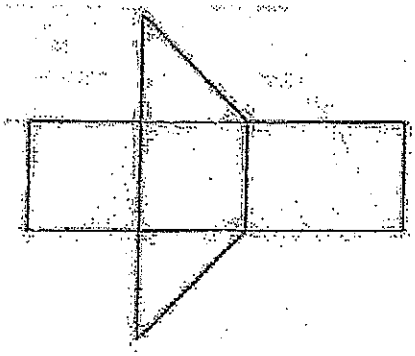


(not to scale)

What is the value of x?

(A) 20 **(B)** 60 **(C)** 80 **(D)** 120

27



This is the net of a:

(A) square pyramid (B) triangular pyramid

(C) square prism (D) triangular prism

28

The balances show the relationships between the masses of three objects.

Arrange the three objects from heaviest to lightest.

(A) △, ○, □ (B) ○, □, △

(C) □, △, ○ (D) △, □, ○

29

The time taken to use all the air in a small diving tank is given by the formula

$$T = \frac{750}{D} - 5$$

where D is the depth of the dive in metres.

Janice dives to a depth of 30 metres. How many minutes will her tank last?

(A) 20 (B) 25 (C) 30 (D) 35

30

A quadrilateral has each pair of opposite sides equal.

Which statement must be correct?

(A) The diagonals are equal.

(B) The diagonals bisect each other.

(C) The diagonals are perpendicular to each other.

(D) The diagonals bisect the angles of the quadrilateral.

SYDNEY TECHNICAL HIGH SCHOOL

YEAR 7

SECTION 1 ANSWER SHEET

Name :_____

Select the alternative A, B, C or D that best answers the question. Fill in the response oval completely.

If you think you have made a mistake, put a cross through the incorrect answer and fill in the new answer.

A ● B ⊗ C ○ D ○

If you change your mind and have crossed out what you consider to be the correct answer, then indicate the correct answer by writing the word ~~correct~~ and drawing an arrow as follows.

correct ↙

A ⊗ B ⊗ C ○ D ○

1	A ○	B ○	C ○	D ○
2	A ○	B ○	C ○	D ○
3	A ○	B ○	C ○	D ○
4	A ○	B ○	C ○	D ○
5	A ○	B ○	C ○	D ○
6	A ○	B ○	C ○	D ○
7	A ○	B ○	C ○	D ○
8	A ○	B ○	C ○	D ○
9	A ○	B ○	C ○	D ○
10	A ○	B ○	C ○	D ○
11	A ○	B ○	C ○	D ○
12	A ○	B ○	C ○	D ○
13	A ○	B ○	C ○	D ○
14	A ○	B ○	C ○	D ○
15	A ○	B ○	C ○	D ○

16	A ○	B ○	C ○	D ○
17	A ○	B ○	C ○	D ○
18	A ○	B ○	C ○	D ○
19	A ○	B ○	C ○	D ○
20	A ○	B ○	C ○	D ○
21	A ○	B ○	C ○	D ○
22	A ○	B ○	C ○	D ○
23	A ○	B ○	C ○	D ○
24	A ○	B ○	C ○	D ○
25	A ○	B ○	C ○	D ○
26	A ○	B ○	C ○	D ○
27	A ○	B ○	C ○	D ○
28	A ○	B ○	C ○	D ○
29	A ○	B ○	C ○	D ○
30	A ○	B ○	C ○	D ○

SECTION 2

NAME:_____

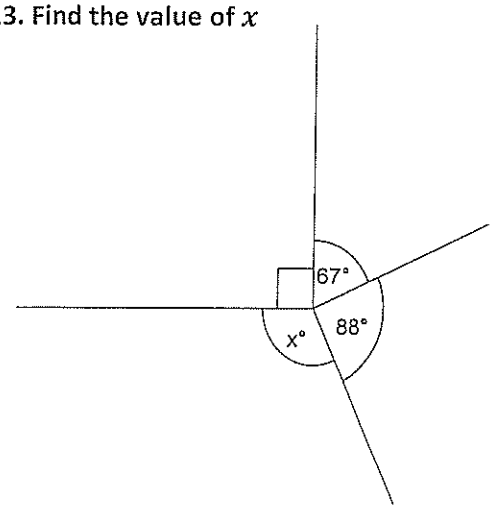
TEACHER:_____

Write all answers on the sheet in the answer column

Time: 30 minutes

1. Write 98 using Roman Numerals	
2. Evaluate $\frac{6}{7} \div 1\frac{1}{2}$	
3. 1.7948 ÷ 0.0007 =	
). State the first three triangular numbers.	
5. Insert grouping symbols to make the following statement true: 31 + 35 ÷ 5 + 2 = 36	
6. Find the Lowest Common Multiple of 12 and 15	
7. What fraction of 3 hours is 25 minutes?	
8. Find $\sqrt[3]{216}$ if 216 = 2x2x2x3x3x3	
9. The supplement of 72°	
10. Simplify $9wx$ x $5xy$ x $2y$	
11. Convert $\frac{1}{6}$ to a recurring decimal	
12. If $1006.60 was shared equally between 7 people, how much would each person receive?	

13. Find the value of x



14. Write the numeral for

$(4x10^4) + (5x\ 10^3) + (6x10^2) + (2x1)$

15. Increase 1500m by 6%

16. Find the Highest Common Factor of 12 and 18

17. Write 120 as a product of its prime factors in index notation.

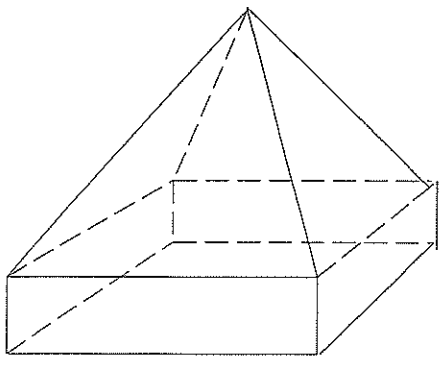
18. Write 2.999 correct to 1 decimal place

19. Which is the middle value in the following set of data?

$\frac{2}{3}$ 56% $\frac{13}{20}$ 0.66 $1\frac{1}{3}$

20. For the following solid, find the number of

(a) faces (b) vertices (c) edges



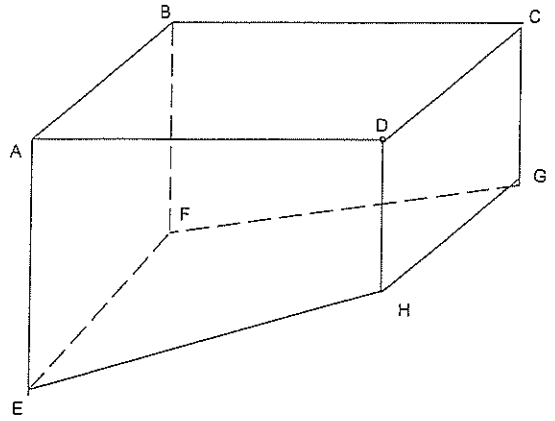
(a)_____

(b) _____

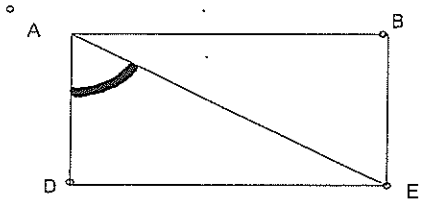
(c)_____

21. If 456 x 987 = 450072, write down the value of 4.56 X 98.7

22. State whether FG and AD are parallel, perpendicular or skew.



23. Name the angle marked



24. Find the algebraic rule that links x and y

x	1	2	3	4
y	6	8	10	12

5. Write an algebraic expression for seven less than the product of g and h

26. Three items weighing 2.1kg, 1.65kg, and 3.47kg are to be posted. By how much does the total weight exceed 7.15kg?

27. Find the number if $\frac{4}{7}$ of the number is 24.

28. How many degrees are there in $\frac{2}{5}$ of a revolution?

SECTION 2

NAME:_____

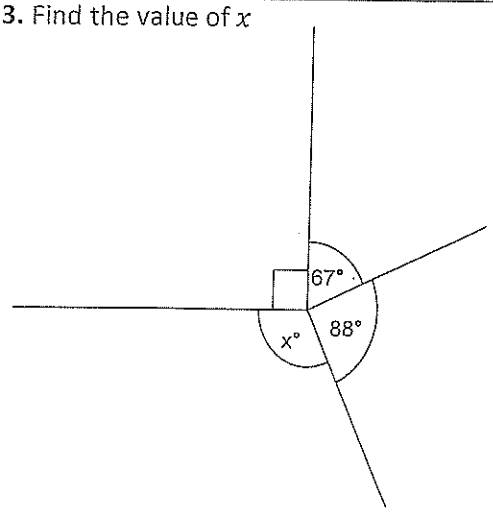
TEACHER:_____

Write all answers on the sheet in the answer column

Time: 30 minutes

1. Write 98 using Roman Numerals	XCVIII
2. Evaluate $\frac{6}{7} \div 1\frac{1}{2}$	$\frac{4}{7}$
3. 1.7948 ÷ 0.0007 =	2564
4. State the first 3 triangular numbers	1, 3, 6
5. Insert grouping symbols to make the following statement true: $31 + 35 \div 5 + 2 = 36$	
6. Find the Lowest Common Multiple of 12 and 15	60
7. What fraction of 3 hours is 25 minutes?	$\frac{25}{180} = \frac{5}{36}$
8. Find $\sqrt[3]{216}$ if 216 = 2x2x2x3x3x3	6
9. The supplement of 72°	108°
10. Simplify $9wx \times 5xy \times 2y$	$90wx^2y^2$
11. Convert $\frac{1}{6}$ to a recurring decimal	$0.1\dot{6}$
12. If $1006.60 was shared equally between 7 people, how much would each person receive?	$143.80

13. Find the value of x



$x = 115^{\circ}$

14. Write the numeral for

$(4 \times 10^4) + (5 \times 10^3) + (6 \times 10^2) + (2 \times 1)$

45602

15. Increase 1500m by 6%

1590m

16. Find the Highest Common Factor of 12 and 18

6

17. Write 120 as a product of its prime factors in index notation.

12×10

$3 \times 2 \quad \times 2 \times 5 \times 2$

$3 \times 2^3 \times 5$

18. Write 2.999 correct to 1 decimal place

3.0

19. Which is the middle value in the following set of data?

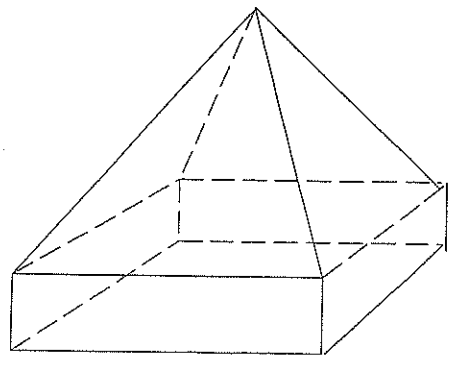
$\frac{2}{3}$ 56% $\frac{13}{20}$ 0.66 $1\frac{1}{3}$

$0.\dot{6}$ 0.56 0.65 0.66 $1.\dot{3}$

0.66

20. For the following solid, find the number of

(a) faces, (b) vertices (c) edges



(a) 9

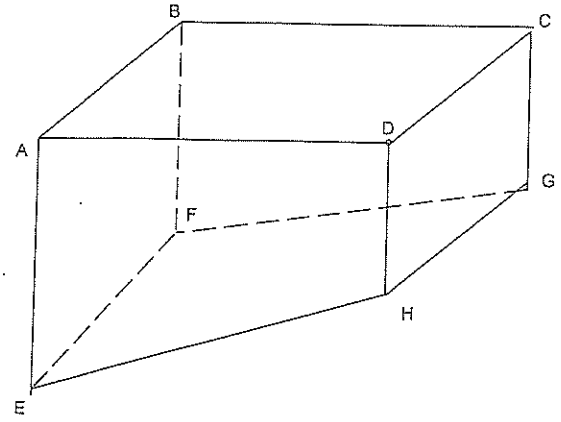
(b) 9

(c) 16

21. If 456 x 987 = 450072, write down the value of 4.56 X 98.7

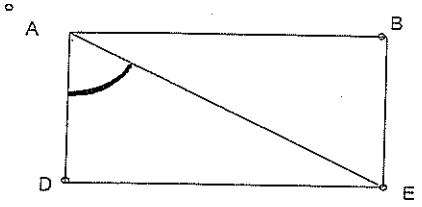
450·072

22. State whether FG and AD are parallel, perpendicular or skew.



Skew

23. Name the angle marked



< DAE or < EAD

24. Find the algebraic rule that links x *and* y

x	1	2	3	4
y	6	8	10	12

$y = 2x + 4$

25. Write an algebraic expression for seven less than the product of g and h

$gh - 7$

26. Three items weighing 2.1kg, 1.65kg, and 3.47kg are to be posted. By how much does the total weight exceed 7.15kg?

0·07kg or 70g

27. Find the number if $\frac{4}{7}$ of the number is 24.

42

28. How many degrees are there in $\frac{2}{5}$ of a revolution?

144°.

SYDNEY TECHNICAL HIGH SCHOOL

YEAR 7

SECTION 1 ANSWER SHEET

Name :_____

Select the alternative A, B, C or D that best answers the question. Fill in the response oval completely.

If you think you have made a mistake, put a cross through the incorrect answer and fill in the new answer.

A ● B ⊗ C ○ D ○

If you change your mind and have crossed out what you consider to be the correct answer, then indicate the correct answer by writing the word ~~correct~~ and drawing an arrow as follows.

correct

A ⊗ B ⊗ C ○ D ○

1	A ○	B ○	C ●	D ○
2	A ○	B ○	C ●	D ○
3	A ●	B ○	C ○	D ○
4	A ○	B ○	C ○	D ●
5	A ●	B ○	C ○	D ○
6	A ○	B ○	C ●	D ○
7	A ●	B ○	C ○	D ○
8	A ○	B ○	C ●	D ○
9	A ⊗	B ○	C ○	D ●
10	A ●	B ○	C ○	D ○
11	A ○	B ○	C ○	D ●
12	A ○	B ○	C ●	D ○
13	A ●	B ○	C ○	D ○
14	A ○	B ○	C ●	D ○
15	A ○	B ○	C ○	D ●
16	A ○	B ●	C ○	D ○
17	A ○	B ●	C ○	D ○
18	A ○	B ●	C ○	D ○
19	A ○	B ●	C ○	D ○
20	A ○	B ●	C ○	D ○
21	A ●	B ○	C ○	D ○
22	A ○	B ○	C ●	D ○
23	A ○	B ○	C ●	D ○
24	A ●	B ●	C ○	D ⊗
25	A ●	B ○	C ○	D ○
26	A ○	B ●	C ○	D ○
27	A ○	B ○	C ○	D ●
28	A ●	B ○	C ○	D ○
29	A ●	B ○	C ○	D ○
30	A ○	B ●	C ○	D ○