ANSWER SHEET

Grade 8 Mathematics

June 2012

Name: _____

Section B: Calculator

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Teacher use only

Selected Response: /30 Marks

Constructed Response: /30 Marks

Total: /60 Marks

Section A	Section B	Exam Total	Percentage
/20	/60	/80	/100

NAME: _____

Grade 8 Mathematics

Final Examination

June 2012

Section B

Calculator Permitted	Selected Response	30 Marks
	Constructed Response	30 marks

You will need a pencil/eraser for this section. You are **permitted** to use a calculator. You <u>are permitted</u> to use any math manipulatives that your teacher has used with you this year.

<u>Questions 11- 40 (multiple choice):</u> These are worth 1 mark each. Even though you have to choose an answer, you may have to work things out on scrap paper. You have been given a computer scorable bubble sheet. You must be very careful of the way you handle this sheet. It will be scored by a computer and must not be **bent**, **torn**, or have <u>**any**</u> stray marks on it. You are to shade **(using a pencil only)** the appropriate bubble (having the same number as the question) on the bubble sheet. Do not shade more than one bubble or the question is scored as incorrect. Erase carefully with a good quality eraser if you need to change an answer.

<u>Questions 5 -14 (constructed response):</u> Answers are to be done in the spaces provided. Students are reminded to show **<u>all</u>** steps/calculations since credit may be given for incomplete or partially correct solutions. **Numerical answers without workings/explanation will <u>not</u> merit full credit.**

Grade 8 Mathematics

Formulae

Area	Square	$A = s^2$
	Rectangle	$A = l \times w$ or $A = b \times h$
	Triangle	$A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$
	Circle	$A = \pi r^2$
Surface Area	Cylinder	$SA = 2\pi r^2 + 2\pi rh$ or $SA = 2\pi r^2 + \pi dh$
Volume		$V = Area\ of\ Base \times Height$
Pi		$\pi = 3.14$
Pythagorean Theorem		$c^2 = a^2 + b^2$

11.   Which set of numbers could be the side lengths of a right triangle?

        A)   1, 1, 2
        B)   8, 15, 17
        C)   10, 12, 15
        D)   10, 20, 30

12.   What is the value of x, in metres, to one decimal place?

        A)   2.8
        B)   9.0
        C)   13.1
        D)   14.9
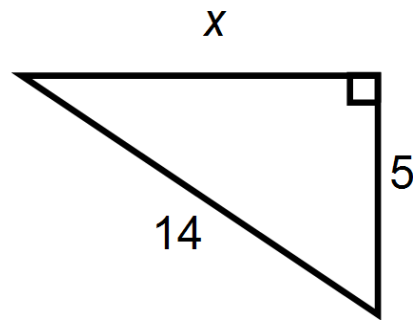
13.   Thomas owes $15 to each of 3 friends. Which equation represents the total amount Thomas owes?

        A) $(-15) \times (+3) = (-45)$

        B) $\frac{(-15)}{3} = -5$

        C) $\frac{15}{3} = 5$

        D) $(+15) \times (+3) = (+45)$

14.   The water level in a pool dropped 8 cm each hour. How many hours did it take for the water level to drop 48 cm?

        A) -40
        B) -6
        C) $+6$
        D) $+40$

15.   In a game, a player earns 3 points for every hit and loses 2 points for every miss. James has 15 hits and 16 misses. If James wants a final score of 31, how many more points does he need?

        A)   6
        B)   9
        C)   13
        D)   18

16. Which expression is equivalent to $\frac{1}{5} \times 62$?

   A) $62 \div 5$

   B) $62 \div \frac{1}{5}$

   C) $5 \div 62$

   D) $\frac{1}{5} \div 62$

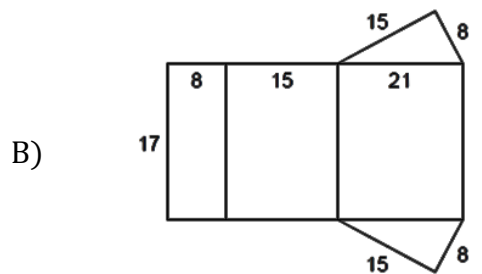17. A ditch holds 12 tonnes of dirt. A pickup can carry $1\frac{1}{2}$ tonnes of dirt. How many pickup loads would fill 7 ditches?
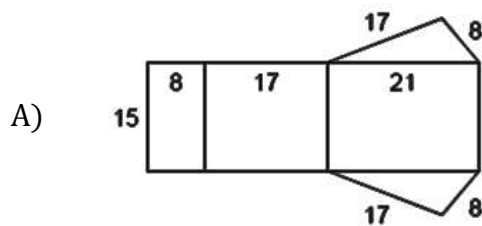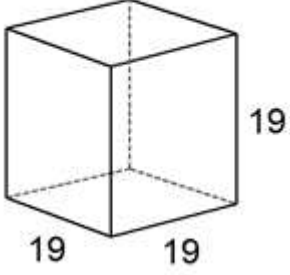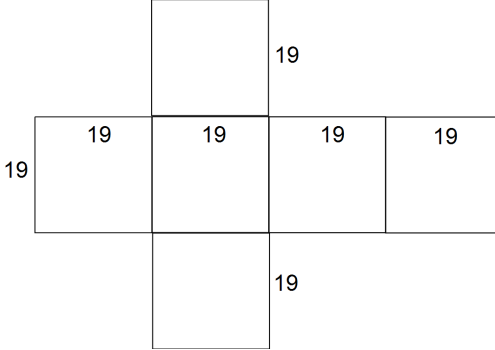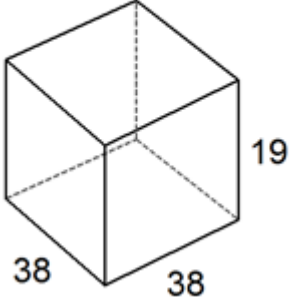
   A)   8
   B)   56
   C) $73\frac{1}{2}$
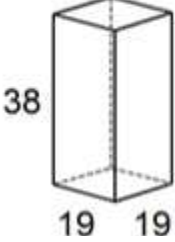   D) $94\frac{1}{2}$

18. Which is the correct net for this solid?

   A)

   B)

   C)

   D)
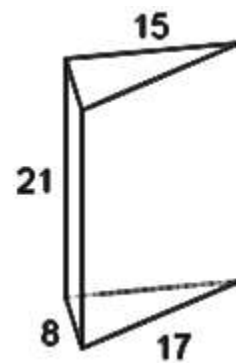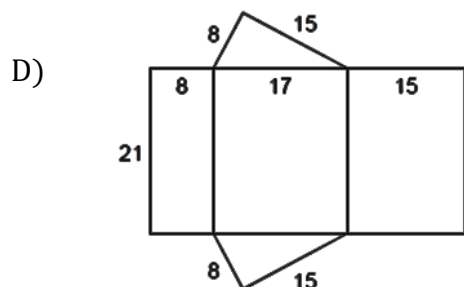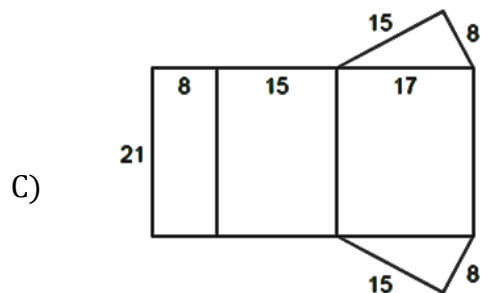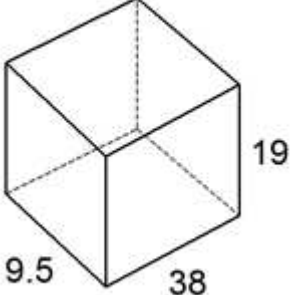
19. Which solid can be constructed from this net?

A)

B)

C)

D)
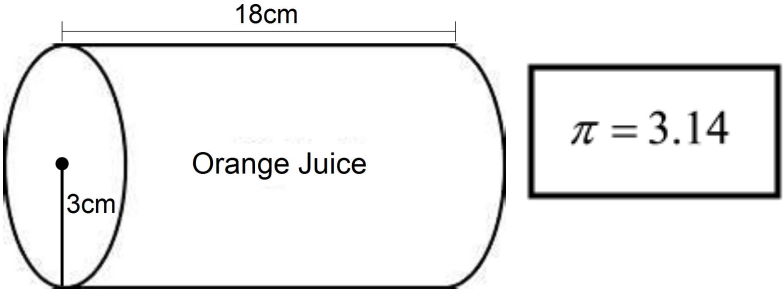
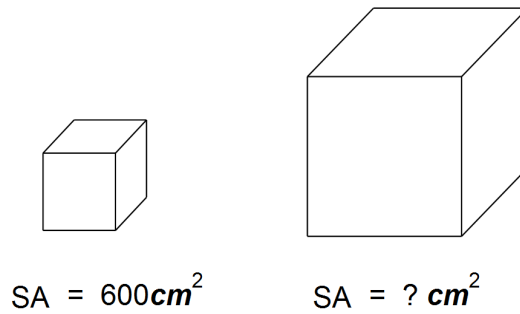20. What is the total surface area, in m², of this cube?

A)   2
B)   4
C)   24
D)   64

4m²

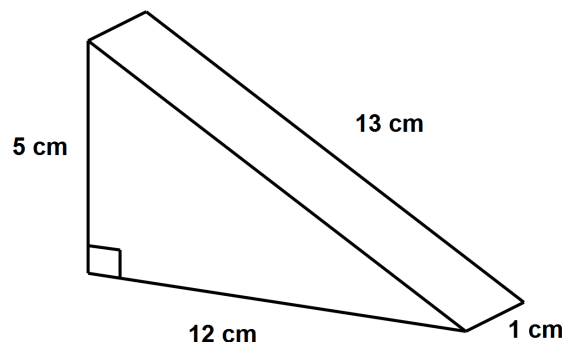21. What is the approximate surface area, in cm², of this can?

A)   54
B)   396
C)   509
D)   2374

18cm

3cm   Orange Juice

$\pi = 3.14$

22. The surface area of a cube is 600 cm². If each edge is doubled, what is the new surface area, in cm²?

SA = 600**cm**^{2} SA = ? **cm**^{2}

A) 200
B) 300
C) 1200
D) 2400

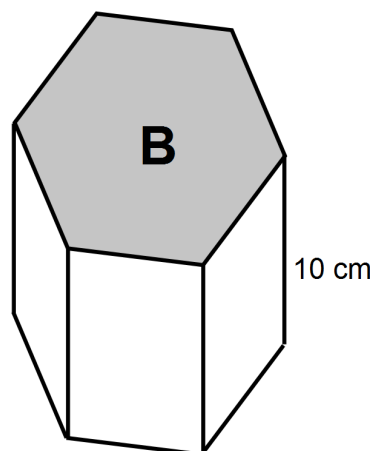23. What is the surface area, in cm², of this triangular prism?

A) 30
B) 90
C) 150
D) 780

13 cm

5 cm

12 cm   1 cm

24. A cylinder has a diameter of 10 cm and a height of 20 cm. What is the volume of the cylinder, in cm³?
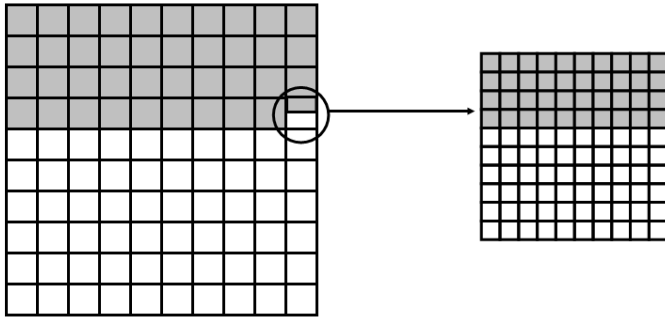
A) 200
B) 785
C) 1570
D) 6280

$\pi = 3.14$

25. The volume of this right prism is 170 cm³. What is the area of the base, in cm²?

A) 17
B) 160
C) 180
D) 1700

B

10 cm

26. What percent of the larger grid is shaded?

   A) 39%
   B) 39.04%
   C) 39.4%
   D) 40%

27. Which percentage is equivalent to 0.004?

   A) 0.04%
   B) 0.4%
   C) 4%
   D) 40%

28. Last year an eReader sold for $150. Today it sells for $105. What is the percent decrease?

   A) 30%
   B) 43%
   C) 70%
   D) 143%

29. There are 45 students going on a school trip. The ratio of boys to girls is 4:5. How many of the students are girls?

   A) 9
   B) 20
   C) 25
   D) 36

30. In his Marathon of Hope, Terry Fox ran 5373 km in 143 days. At this rate, approximately how many kilometres did he run in 10 days?

   A) 14.3
   B) 37.6
   C) 375.7
   D) 537.3

31. Solve for m: $\dfrac{m}{6} + 3 = -2$

    A) -30
    B) -15
    C)   4
    D)   6

32. Solve for a: $-5a + 7 = -53$

    A) $\dfrac{17}{5}$

    B)   9

    C)   12

    D) $\dfrac{87}{5}$

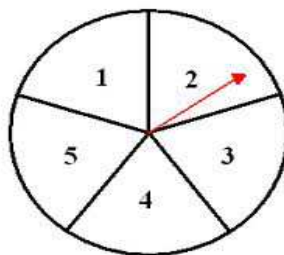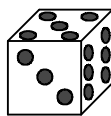33. What is the first step in solving the equation $\dfrac{x}{3} - 1 = 2$?

    A) $\dfrac{x}{3} \div 3 - 1 = 2 \div 3$

    B) $\dfrac{x}{3} - 1 - 1 = 2 - 1$

    C) $\dfrac{x}{3} - 1 + 1 = 2 + 1$

    D) $\dfrac{x}{3} \times 3 - 1 = 2 \times 3$

34. What type of graph would you use to display the percentage of favorite hockey teams of Grade 8 students?

    A)   bar
    B)   circle
    C)   line
    D)   pictograph

35. What is the probability of rolling a 2 and spinning an odd number?

    A) $\dfrac{1}{15}$

    B) $\dfrac{1}{10}$

    C) $\dfrac{5}{18}$
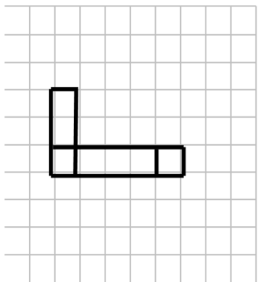
    D) $\dfrac{4}{11}$

36. Jennifer puts these lettered cards in a bag
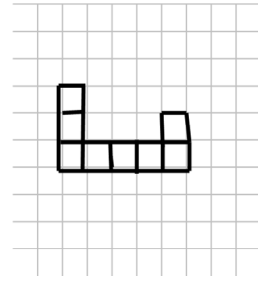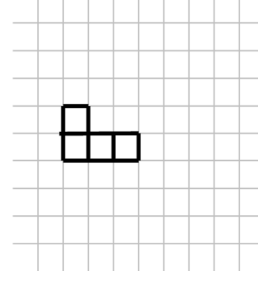
A B R A C A D A B R A

She selects a card, replaces it, and selects another card. What is the probability that she will choose A and then B?
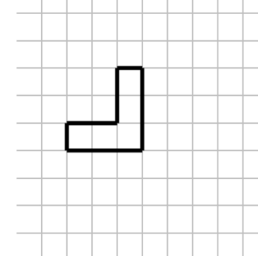
A) $\dfrac{10}{121}$

B) $\dfrac{7}{22}$

C) $\dfrac{7}{11}$

D) $\dfrac{10}{11}$

37. A spinner has 12 equal sectors: 4 red, 3 blue, and 5 yellow. The pointer on the spinner is spun 3 times. What is the probability of landing on red, then blue, then red again?

A) $\dfrac{1}{36}$

B) $\dfrac{11}{36}$

C) $\dfrac{11}{12}$

D) 4

38. What is the sum of the angles, in degrees, around any given point in a tessellation?

A) 45
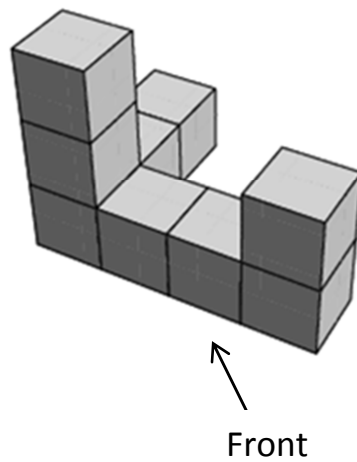B) 90
C) 180
D) 360

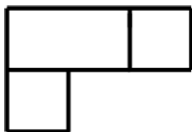39. Justin created a three dimensional object using blocks. Which is the only correct view of his object?
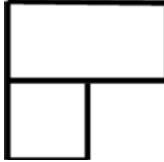

Front

A)

Top View
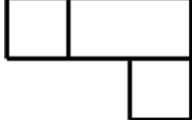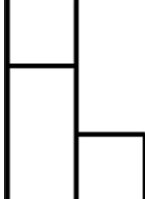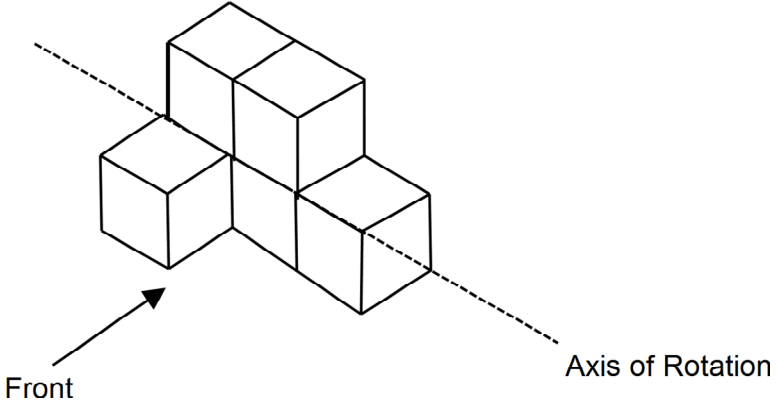
B)

Front View

C)

Right View

D)

Left View

40. What is the front view of the object after it has been rotated 90° towards you about the axis?

Front

Axis of Rotation

A)

B)

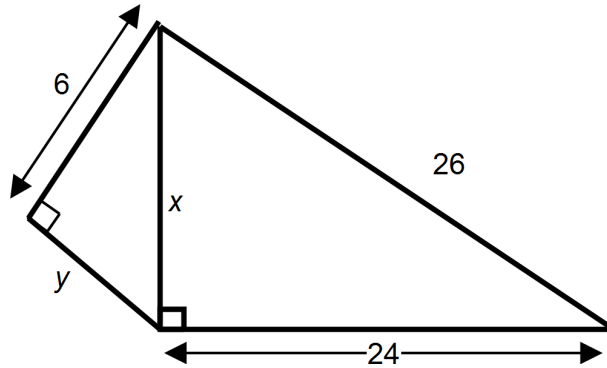C)

D)

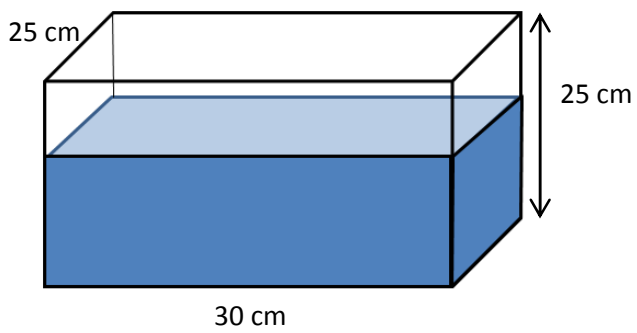5.   Determine the value of x and y.   [3 Marks]

6.   Evaluate: $\frac{2}{3} + 1\frac{1}{3} \div \frac{5}{6}$ [3 Marks]

7. An aquarium has the dimensions 30 cm × 25 cm × 25 cm. The water is 8 cm from the top. What volume of water, in cm³, is in the aquarium? [3 Marks]

8. Find the surface area of a cylinder with a diameter of 30cm and the height of 20cm. [3 Marks]

$$\pi = 3.14$$

9. Alyssa bought a Blu-ray Disc on sale for $34.00 which was 85% of the regular price.

    (A)   What was the regular price of the disc?   [2 Marks]

    (B)   What did she pay, including 13% sales tax?   [1 Mark]

10.   In two stores, the same detergent is on special. Which is the better buy? Explain. [3 Marks]

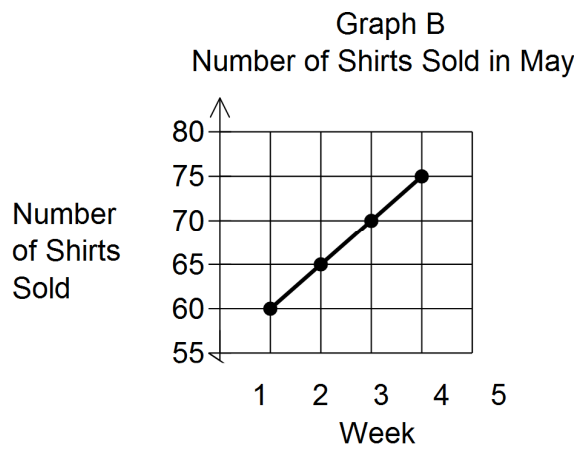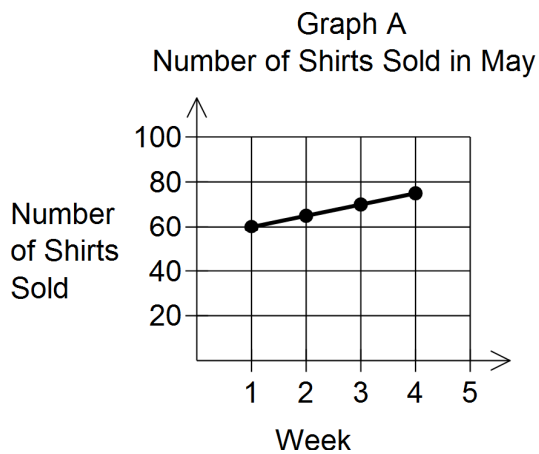   **Store A:** 6 bottles for $12.48   **Store B:** 7 bottles for $14.42

11.   A bookstore originally had 12 Math books and 15 Science books. If 6 Math books are sold, what is the new ratio in lowest terms, of math books to the total books?

                                                                      [3 Marks]

12. The two line graphs show sales of T-shirts at The Tee Shop for May.

Graph A
Number of Shirts Sold in May

Graph B
Number of Shirts Sold in May

Which graph could be misleading? Explain. [2 Marks]
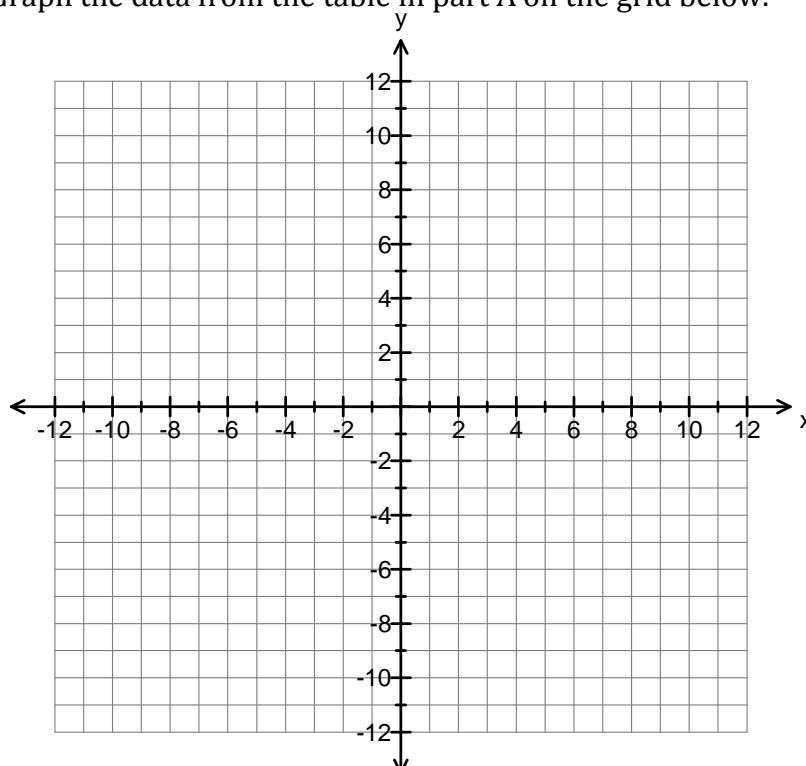
13. The equation of a linear relation is: $y = 3x - 4$

A. Complete this table of values for the relation. [1Mark]

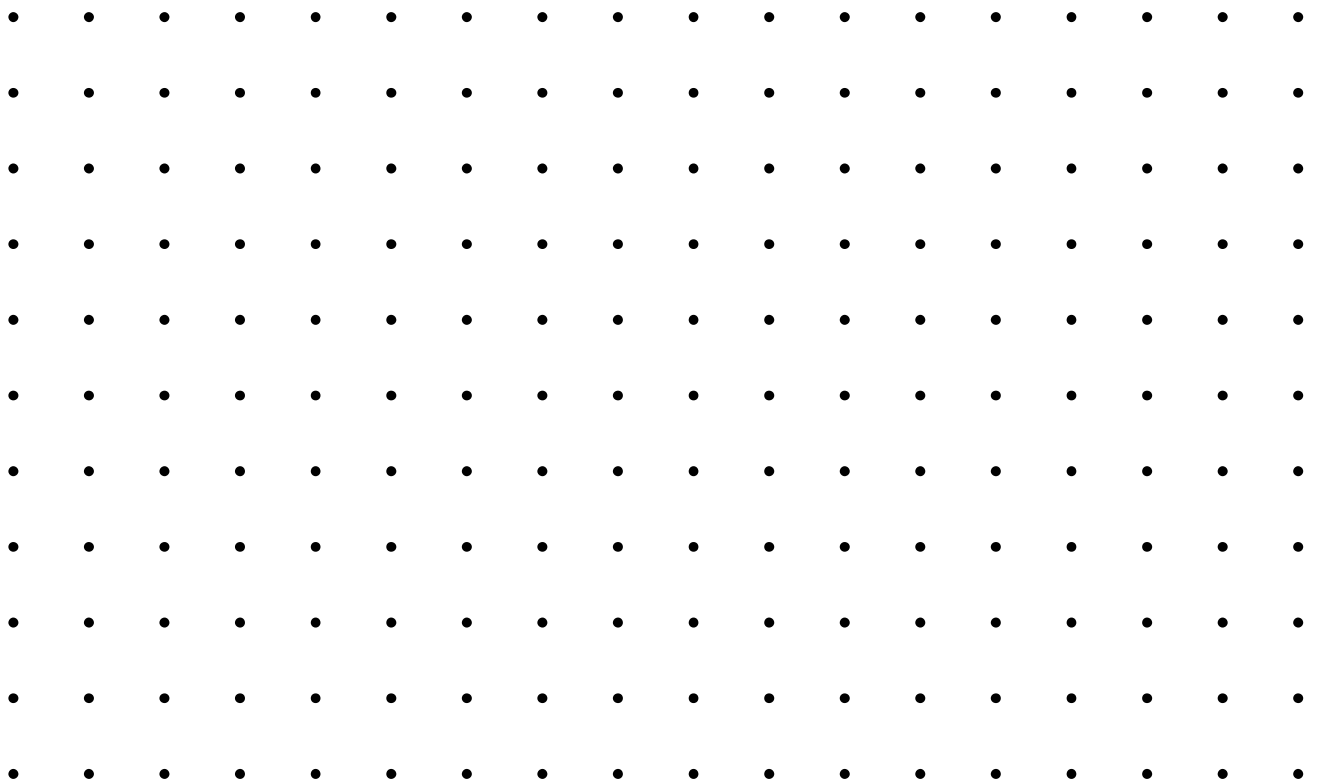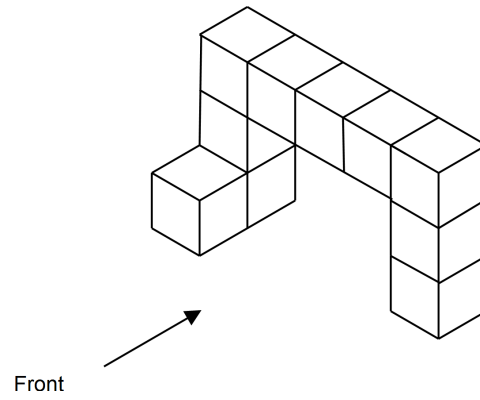| x	y
-1	
0	
1	
2	

B. Graph the data from the table in part A on the grid below. [1 Mark]

14.   Draw and label any two views of this object?   [2 Marks]

Front

15. Use **ALL** three objects to create a tessellation on the grid below. Repeat your tessellation at least twice. [3 marks]