Carlingford High School

2020 YEAR 10 TERM 1 EXAM

Mathematics 5.2

STUDENT NAME:_____

Teacher: (Please Circle)

10MA2X (Ms Virmani/Ms Wilson) 10MA2Y (Mr Gong) 10MA2Z (Ms Blakeley)

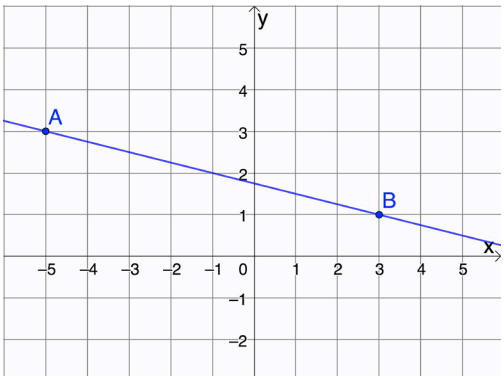
Instructions

- Working time - 50 minutes
- Write using black pen
- Calculators approved by NESA may be used
- Show relevant mathematical reasoning and/or calculations

TOPIC	**MARKS**
Linear Relationships **Questions: 1 – 10**	**/20**
Surface Area and Volume **Questions: 11 – 16**	**/20**
TOTAL	**/40**

LINEAR RELATIONSHIPS

Questions 1 – 3 refer to the graph below.

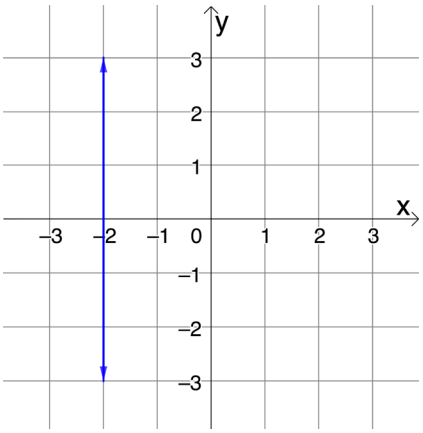


1. Find the length of the interval AB, answer correct to 2 decimal places. **[2]**

2. Find the midpoint of the interval AB **[2]**

3. Find the gradient of the interval AB **[2]**

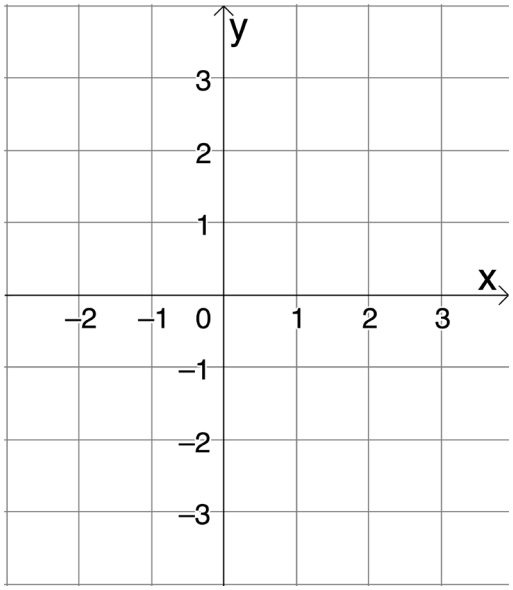
4. What is the equation of this line? **[1]**



5. Write the equation of a line with gradient 5 and y-intercept -7. **[1]**

6. (a) Graph this table of values on the number plane below. **[1]**

x	-1	0	1	2
y	3	1	-1	-3



(b) Find the equation of the line you graphed in part (a). **[2]**

7. Which line is parallel to $y = 2 + 3x$? **[1]**

A $y = 1 - 3x$

B $y = \frac{x}{3} + 2$

C $y = 3$

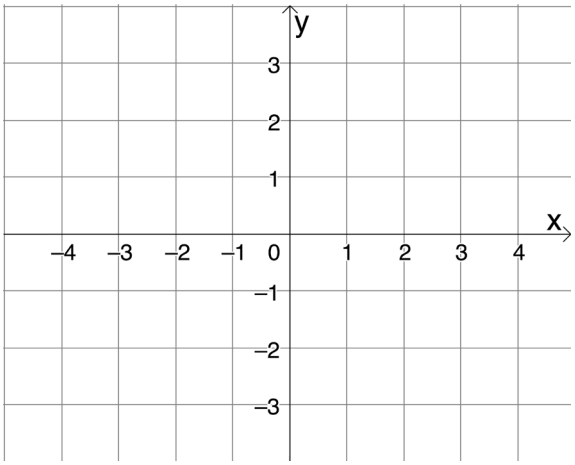
D $y = 3x + 6$

8. Test whether the point $(-3, 1)$ lies on the line $y = 2x - 5$. **[2]**

9. Graph $2x - 3y = 3$ by finding the gradient and y-intercept first.

Gradient = **[1]**

y-intercept = **[1]**



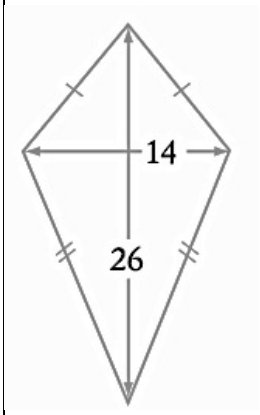
[1]

10. Find the equation of the line that is perpendicular to $y = 3x - 1$ and passes through the x-axis at 4. **[3]**

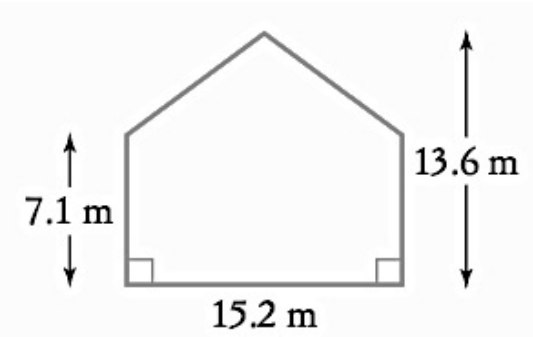
SURFACE AREA AND VOLUME

11. Find the area of the following shapes.

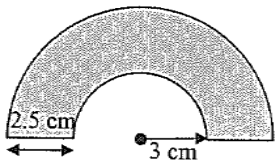
(a) **[1]**



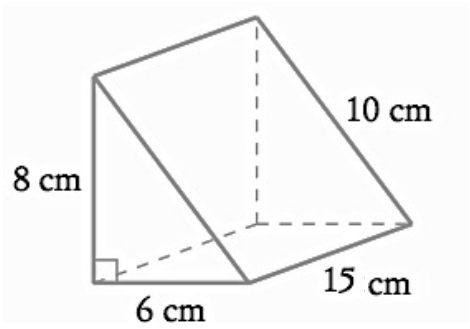
(b) **[2]**



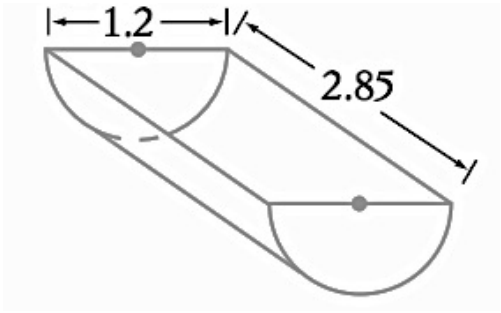
(c) Answer correct to 1 decimal place. **[2]**



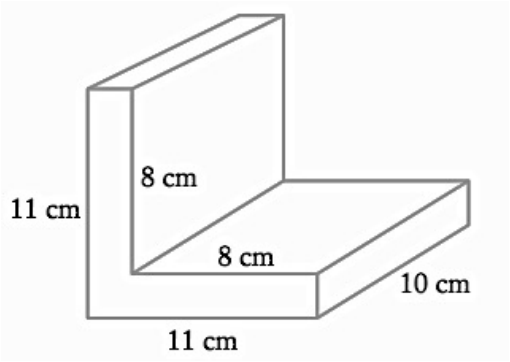
12. Calculate the surface area of the following triangular prism. **[2]**



13. Calculate, correct to 2 decimal places, the surface area of the following closed half cylinder. All measurements are in metres. **[3]**



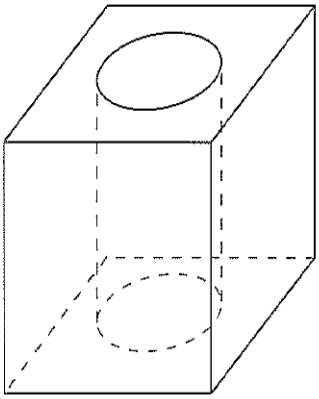
14. For the following solid, calculate:



(a) its surface area **[2]**

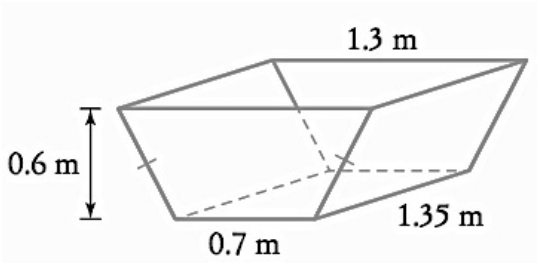
(b) its volume **[2]**

15. A solid metal cube has a cylinder drilled completely through it, as shown below. **[3]**



The cube has side lengths of 10 cm and the diameter of the cylindrical hole is 6 cm. Calculate the volume of the cube with the hole drilled through it, correct to the nearest cm^3.

16. A rubbish disposal skip is in the shape of a trapezoidal prism with dimensions as shown. Find its capacity in litres. **[3]**



END OF EXAM