Carlingford High School

Mathematics

Modified

Year 9 Term 2 Examination

2018

Name: _____ Class: 9MA_1_1

Teacher: Ms Strilakos

- Time allowed: 55 minutes
- Calculators allowed PLUS Multiplication Tables sheets
- Show all necessary working
- Use blue or black pen to write your answers

Topic	ALGEBRA	AREA AND VOLUME	TOTAL
TOTAL	/69	/28	/97

SECTION 1 **ALGEBRA (69 marks)**

Q.1 Write the algebraic expression for:

(i) the sum of *p* and *q*

(ii) the difference between *a* and *b*

(iii) the product of *r* and *t*

(iv) the quotient of *g* and *h*

[4]

Q.2 Write each statement as an algebraic expression:

(i) double *y* less 4

(ii) 8 decreased by *b*

(iii) double the sum of *x* and *y*

(iv) the square of *p* less 7

(v) *m* squared plus double *p*

[5]

Q.3 Write an algebraic expression for the cost of 6 pies at $\$y$ each.

Q.4 A barn contains 4 cows, 3 horses and 8 chickens.

How many legs in the barn altogether?

[2]

Q.5 If $x = 2$ and $y = -3$ evaluate each of the following expressions:

(i) $2x + 3y$

(ii) $4xy$

(iii) $6xy^2$

[2+1+2]

Q.6 Simplify each of the following:

(i) $8y - 6y$

(ii) $-2x - x$

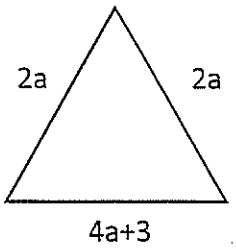
(iii) $7a - 3b + a - 8b$

(iv) $4y^2 - 5y + 3y^2$

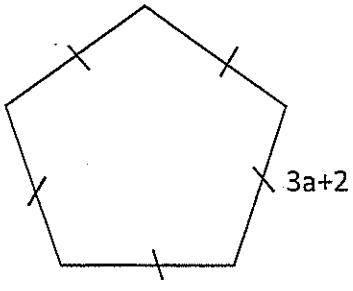
[4]

Q.7 Write an algebraic expression for the perimeter of each shape in simplest form:

(i)



(ii)



[2+2]

Q.8 Simplify each algebraic expression:

(i) $2 \times 4m$

(ii) $3x \times 4y$

(iii) $-5y \times 2p$

(iv) $-4xy \times (-3y)$

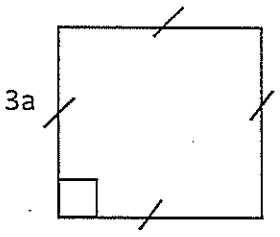
(v) $4m \times 3m^2$

(vi) $4ab \times (-3a) \times (-2b)$

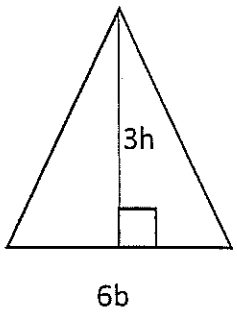
[1+1+1+2+2+2]

Q.9 Find an algebraic expression for the area of each shape:

(i)



(ii)



[2+2]

Q.10 Simplify each quotient:

(i) $\frac{8f}{4}$

(ii) $12b \div (-3)$

(iii) $\frac{16ab}{-4a}$

(iv) $\frac{32x^3y^4}{4xy}$

[1+1+2+2]

Q.11 Simplify each expression using the order of operations:

(i) $14 + 2y \times 6$

(ii) $12m - 8m \div 2$

(iii) $54y \div 6 - 3 \times 2y$

[1+2+2]

Q.12 Expand each of the following:

(i) $3(x + 4)$

(ii) $4m(m - 2)$

(iii) $-8(5 - 3m)$

[1+2+2]

Q.13 Expand and simplify:

(i) $2(x - 4) + 4(x - 3)$

(ii) $5(2a + 6) - 2(3a - 8)$

[2+3]

Q.14 Find the highest common factor for each pair of terms:

(i) $8y \text{ and } 12y$

(ii) $6j \text{ and } 8k$

(iii) $12m \text{ and } 4mn$

(iv) $12a^2 \text{and } 18ab$

[4]

Q.15 Factorise each expression:

(i) $3a + 9$

(ii) $xy + yz$

(iii) $8ps - 24s$

(iv) $-2a - 14$

(v) $-20k + 25$

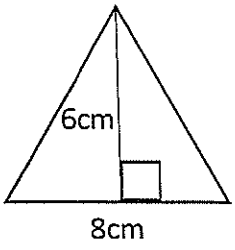
(vi) $-6xy - 42y^2$

[1+1+1+1+1+2]

SECTION 2 **AREA AND VOLUME (28 marks)**

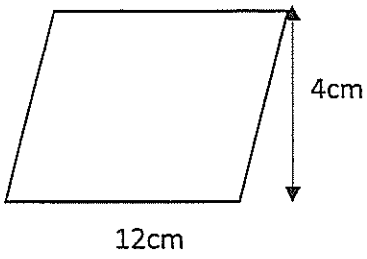
Q.1 Find the area of each of the following shapes:

(i)



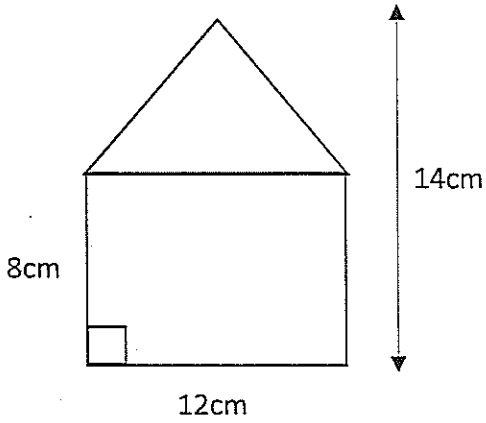
[1]

(ii)



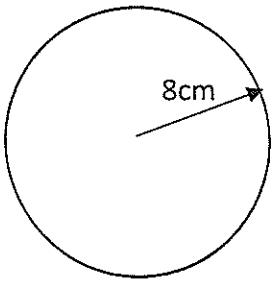
[1]

(iii)



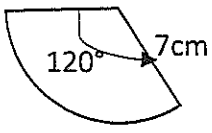
[3]

(iv)



[1]

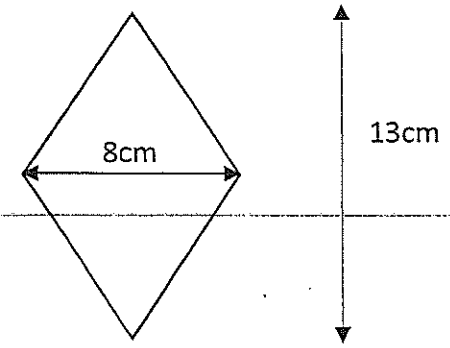
(v)



[2]

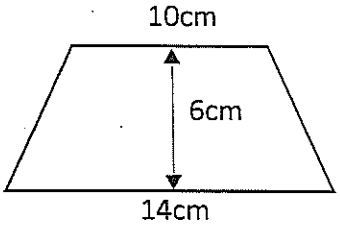
Q.1 (continued)

(vi)



[1]

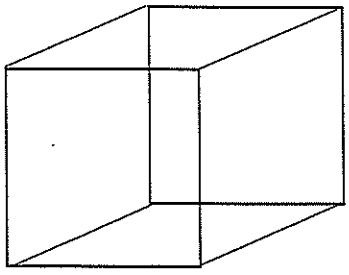
(vii)



[2]

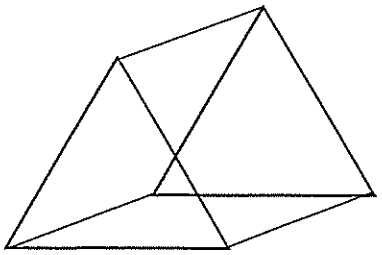
Q.2 Draw the net for each of the following solids:

(i)



[2]

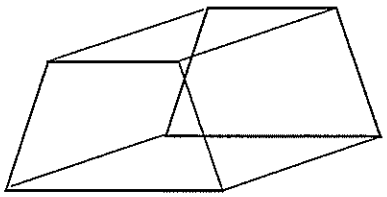
(ii)



[2]

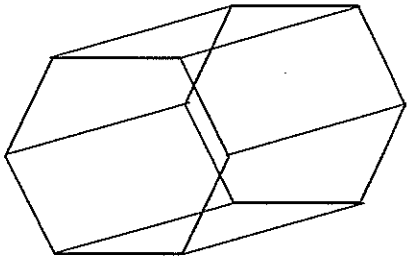
Q.3 Draw the shape of the uniform cross section for each of the following prisms:

(i)



[1]

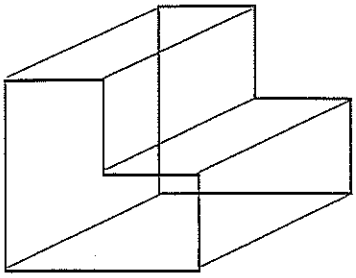
(ii)



[1]

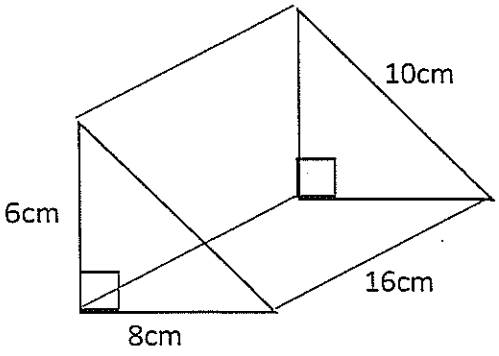
Q.3 (continued)

(iii)



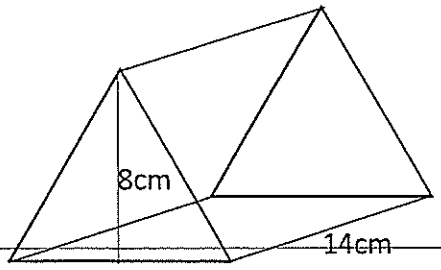
[1]

Q.4 Find the surface area of the following prism.



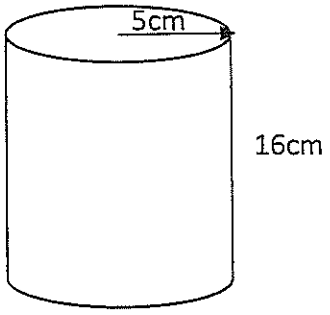
[3]

Q.5 Find the volume of the following prism:



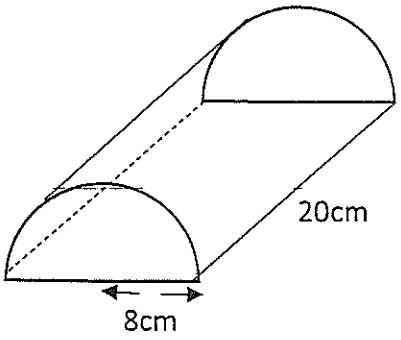
[2]

Q.6 Find the volume of the following cylinder:



[2]

Q.7* Find the surface area of the following solid.



[4]

END OF TEST