This is a Class 1 exam

Lebanon Evangelical School
for Boys and Girls
Loueizeh - Baabda

Stage Exam 02

19DEC2022

Do NOT write in this box. Your MARK will be placed here.

Subject :	Maths	
Class :	9A	
Teacher :	Mrs.Claudine Eid	
Duration :	1 Period	
Calculators are allowed		
Your name :		*Time taken to complete exam*
Your Class :		
Exam Room :		
How many sheets, including cover sheet :		

- Do not open this paper until the teacher in charge instructs you to do so.
- The most important thing to remember in taking an exam is NEVER PANIC.
- If you are caught cheating in this exam, you will be awarded zero for ALL exams that are taken on this day.

Answer ALL questions.

Write your answers in the space provided

You must write down all the stages in your working.

1. Factorize the following

(a) $12a^2 - 18a^5$

---

(1)

(b) $14(p-1)^2 - 21(p-1)$

---

(2)

(c) $x^2 - 6x - 16$

---

(2)

(d) $25 - 16y^2$

---

(2)

(Total for Question1 is 7marks)

2.Expand the following and simplify .

(a) $-3x(x-2t)$

---

(1)

(b) $(-x+3)^2$

---

(2)

(c) $(x-1)(x-2)$

---

(2)

(d) $(x-3)(2x+3)(4x+5)$

---

(3)

(Total for Question2 is 8 marks)

3.(a) Make x the subject of the formula $y = 2x - 4$

---

(1)

(b) Make s the subject of the formula $t = r^2 - 3rs$

---

(2)

(c) *Make* f *the subject of the formula*

$d = \frac{3(1-f)}{f-4}$

---

(4)

(Total for Question3 is 7 marks)

4.Solve the following equations

$a) 2(x-3) = 3(x+5)$

---

(2)

$b) \frac{x+1}{4} = x$

---

(2)

$c) \frac{x+1}{15} - \frac{x-2}{10} = 1$

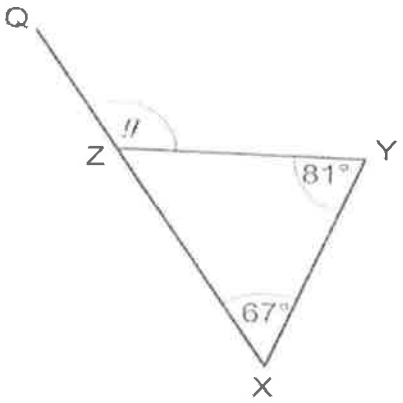
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(3)

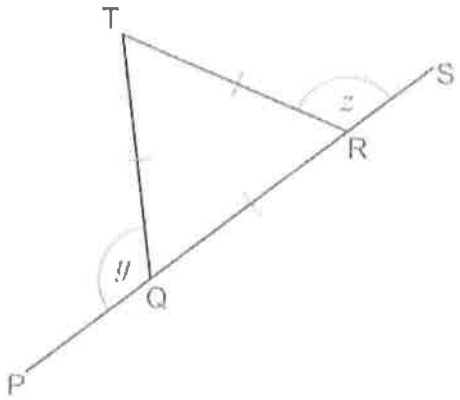
(Total for Question4 is 7marks)

5. Work out the size of each angle marked with a letter.

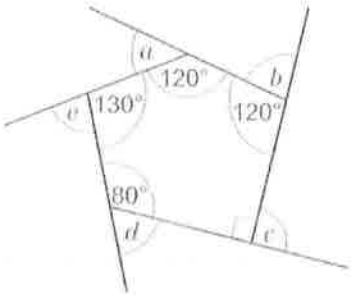
a) ----------(1)



b) ----------(1)



c) ---------- (3)



(Total for Question5 is 5marks)

6.

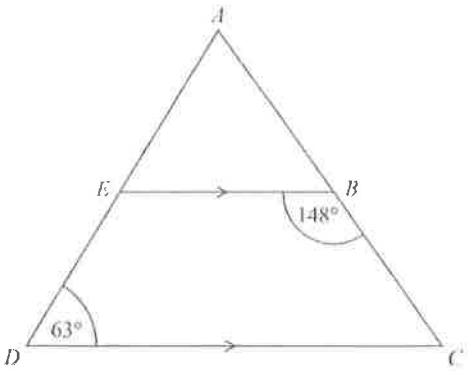
ADC is a triangle.

AED and ABC are straight lines. EB is parallel to DC.

Angle $EBC = 148°$

Angle $ADC = 63°$

Work out the size of angle EAB.



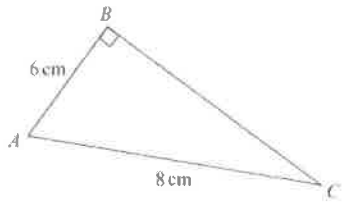
You must give a reason for each stage of your working.

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(5)

(Total for Question6 is 5marks)

7. ABC is a right angled triangle .



Find the length of BC.

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(3)

(Total for Question7 is 3marks)

8. Work out the size of each interior and exterior angle of

a) A regular pentagon
b) A regular heptagon
c) A regular octagon

---

(3)

(Total for Question8 is 3marks)

Total for paper is 45 marks

Answer ALL questions.

Write your answers in the space provided

You must write down all the stages in your working.

1. Factorize the following

(a) $12a^2 - 18a^5$

$6a^2(2 - 3a^3)$ [1]

(1)

(b) $14(p-1)^2 - 21(p-1)$

$7(p-1)(2(p-1)-3)$

$7(p-1)(2p-5)$ [1] [1]

(2)

(c) $x^2 - 6x - 16$

$(x-8)(x+2)$ [1] [1]

(2)

(d) $25 - 16y^2$

$(5-4y)(5+4y)$ [1] [1]

(2)

(Total for Question1 is 7marks)

2.Expand the following and simplify .

(a) $-3x(x-2t)$

$-3x^2+6xt$ [1]

(1)

(b) $(-x+3)^2$

x^2-6x+9 [1] [1]

(2)

(c) $(x-1)(x-2)$

x^2-3x+2 [1] [1]

(2)

(d) $(x-3)(2x+3)(4x+5)$

$(2x^2-3x-9)(4x+5)$ [1]

$8x^3-2x^2-51x-45$ [1] [1]

(3)

(Total for Question2 is 8 marks)

3.(a) Make x the subject of the formula $y = 2x - 4$

$$x = \frac{y+4}{2}$$ 1

(1)

(b) Make s the subject of the formula $t = r^2 - 3rs$

$$t - r^2 = -3rs$$ 1

$$s = \frac{t - r^2}{-3r}$$ 1

(2)

(c) *Make f the subject of the formula*

$d = \frac{3(1-f)}{f-4}$

$$d(f-4) = 3(1-f)$$ 1

$$fd - 4d = 3 - 3f$$

$$fd + 3f = 3 + 4d$$ 1

$$f(d+3) = 3 + 4d$$ 1

$$f = \frac{3+4d}{d+3}$$ 1

(4)

(Total for Question3 is 7 marks)

4.Solve the following equations

a) $2(x-3) = 3(x+5)$

$2x - 6 = 3x + 15$ 1

$2x - 3x = 15 + 6$

$-x = 21$ 1

$x = -21$

(2)

b) $\frac{x+1}{4} = x$

$4x = x + 1$ 1

$3x = 1$

$x = \frac{1}{3}$ 1

(2)

c) $\frac{x+1}{15} - \frac{x-2}{10} = 1$

$2(x+1) - 3(x-2) = 30$ 1

$2x + 2 - 3x + 6 = 30$ 1

$-x = 30 - 8$

$-x = 22$ 1

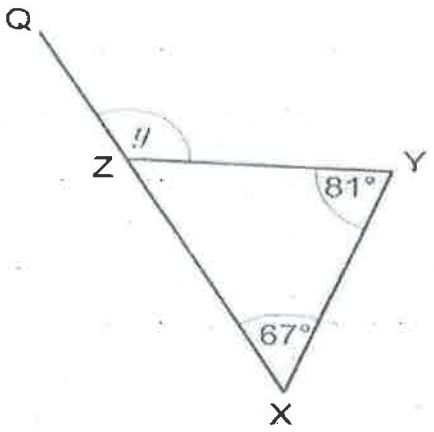
$x = -22$

(3)

(Total for Question4 is 7marks)

5. Work out the size of each angle marked with a letter.

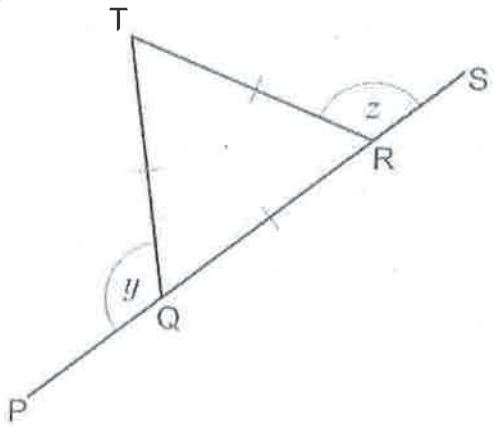
a) ----------(1)



$y = 67 + 81$

$y = 148^\circ$

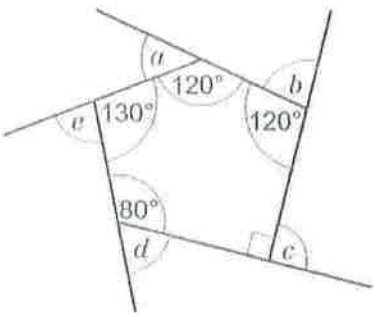
b) ----------(1)



$y = z = 180 - 60$

$= 120^\circ$

c) ---------- (3)



$a = 180 - 120 = 60^\circ$ [1]

$b = 180 - 120 = 60^\circ$

$c = 180 - 90 = 90^\circ$ [1]

$d = 180 - 80 = 100^\circ$

$e = 180 - 130 = 50^\circ$ [1]

(Total for Question5 is 5marks)

6.

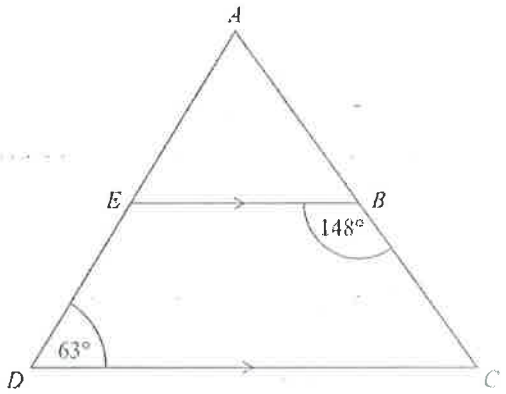
ADC is a triangle.

AED and ABC are straight lines. EB is parallel to DC.

Angle $EBC = 148°$

Angle $ADC = 63°$

Work out the size of angle EAB.



You must give a reason for each stage of your working.

$\angle EBA = 180° - 148° = 32°$ [1] (straight line)

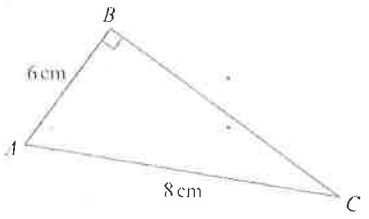
$\angle AEB = 63 = \angle ADC$ [1] [1] corresponding angles

$\angle EAB = 180 - 32 - 63 = 85$ [1] [1] Sum of angles of a triangle = 180

(5)

(Total for Question6 is 5marks)

7. ABC is a right angled triangle .



Find the length of BC.

$AC^2 = AB^2 + BC^2$ pythagoras thm

$8^2 = 6^2 + BC^2$ [1]

$64 - 36 = BC^2$ [1]

$\Rightarrow BC = \sqrt{28} = 2\sqrt{7}$ or 5.29 cm [1]

(3)

(Total for Question7 is 3marks)

8. Work out the size of each interior and exterior angle of

a) A regular pentagon
b) A regular heptagon
c) A regular octagon

$\frac{(n-2)\times 180}{n}$ $\frac{360}{n}$

a] regular pentagon 108 [1] 72

b] regular heptagon 128.6 [1] 51.4

c. regular octagon 135 [1] 45

(3)

(Total for Question8 is 3marks)

Total for paper is 45 marks