ETE1 SAMPLE QUESTION PAPER 2019 /2020

SUBJECT			MATHEMATICS			
DATE		**GRADE**	8	**TIME**		**MAXIMUM MARKS**
STUDENT'S NAME						

HOD's Signature:

AL AIN JUNIORS SCHOOL
BRITISH SYSTEM

READ THESE INSTRUCTIONS FIRST

Write your answer in the space provided.

Write in dark blue or black pen.

Answer **all** questions.

The number marks is given in brackets [ ] at the end of each question or part question.

Q1. Find the value of the following
   a) $(2.9)^2$

Answer: ………………[2]

   b) 8.562×10^{-5}

Answer: ………………[2]

Q2. Write the following single expression in index form.
   a) $12^4 \times 12^5$

Answer: …………........[1]

   b) $c^6 \text{ x } c^{-3} \text{ x } c^4$

Answer: …………........[1]

   c) $x^6 \times x^3 \div x^4$

Answer: …………........[2]

Q3. Round the following number to the accuracy given in brackets.

   a) 23.598 (nearest unit)

Answer: ………………[1]

   b) 0.000 457 (1 significant figure)

Answer: ………………[1]

   c) 2072 (nearest 10)

Answer: ………………[1]

Q4. Write the following number in standard form

   a) 0.00 7 05

Answer: ………………[1]

   b) 503 000 000

Answer: ………………[1]

c) Write the following numbers in standard form and then place them in order of size with the smallest first.

576 000 000, 20 000 000 000, 997 000 000, 247 000

Answer:…………………...[3]

Q5. A bag of marbles is said to contain 50 marbles to the nearest 10. What is the greatest number of marbles that could be in the bag?

Answer:…………..…….[3]

Q6. The terms of a sequence are generated by starting with 45 and subtracting 8 each time.
  a) Write the first 5 term of the sequence   [2]

  b) Find the formula for the nth term of sequence   [2]

  c) Which term is equal to −195.   [3]

Q7. Correct 0.0095×673 to one significant figures and hence give a rough answer.

Answer:………………[2]

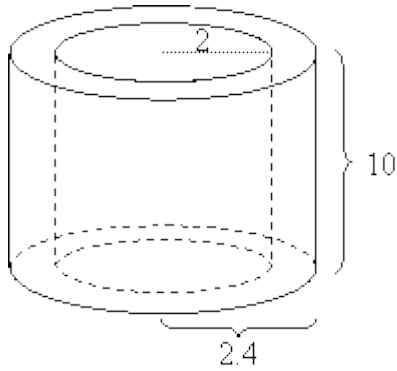Q8. The base of a parallelogram is 4cm and the area is 24cm^2. Find the height H of the parallelogram
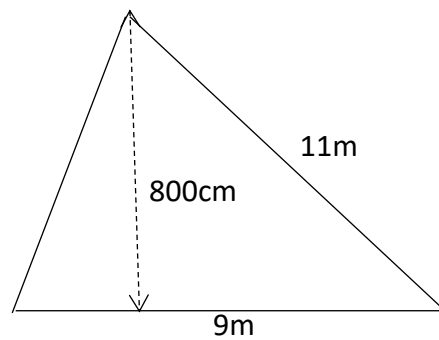
Answer:…………cm^2[2]

Q9. Simplify:
$$\frac{14}{25} \times \frac{15}{16} \times \frac{4}{77}$$

Answer:………..…....[2]

Q 10 The figure shows a section of a metal pipe. Given the internal radius of the pipe is 2 cm, the external radius is 2.4 cm and the length of the pipe is 10 cm. Find the volume of the metal used.

Q11. Find the area of the triangle below. Give your answer in m^2

Answer:…..……..m² [3]

Q12. *Calculate* $4\frac{1}{3} \times 1\frac{1}{8} \div 2\frac{1}{4}$

Answer:…………….[3]

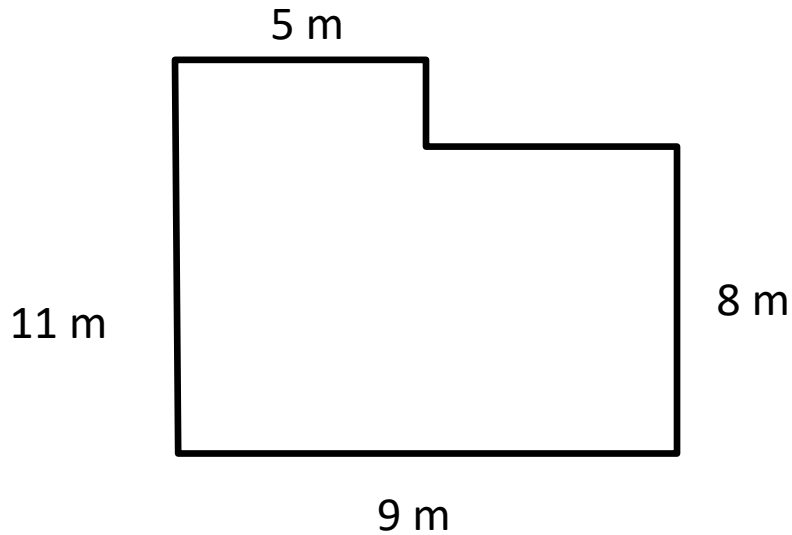Q13. Calculate the following
   a) Find $\frac{2}{3}$ of 81mg?

Answer:……………[2]

   b) $\frac{13b}{15} \div \frac{26b}{15}$

Answer:……………… [2]

Q14. Calculate $\left(\frac{3}{10} \times \frac{2}{5}\right) \div \frac{7}{15}$

Q15. Here is a sketch of the floor of a swimming pool

5 m

11 m

8 m

9 m

Joseph wants to tile the bottom of his swimming pool. Tiles cost £3 per m².
Calculate the total cost for Joseph to tile the floor of the swimming pool.
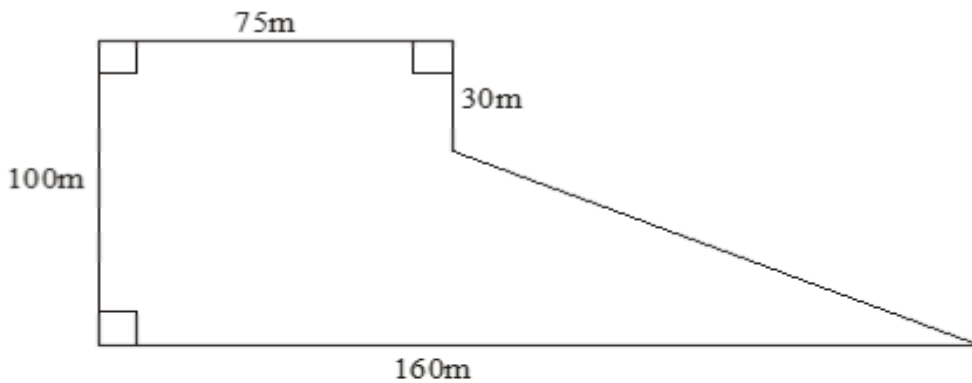
Q16

75m

30m

100m

160m

Diagram **NOT** accurately drawn

The diagram shows the plan of a field.
The farmer is going to cover the field in fertiliser. Each box of fertiliser covers 2000m².

Work out the total number of boxes of fertiliser that the farmer needs to buy.

Q 17 Expand the following brackets
    a) $(x - 8)^2$ [2]
    b) $(2x - 5)^2$ [2]

    c) $(a + 8)^2$ [2]
    d) $(3a + 7)^2$ [2]

    e) $(x - 6)(x + 8)$ [2]
    f) $(2x - 7)(2x + 7)$ [2]

Q 18. *Solve the given equation*

    a) $5x + 3(x + 1) = 14$

.

Answer: $x =$ ……. [3]

    b) $x^2 = 25$

Answer: $x =$ ……. [3]

Q19. Simplify the following expression.
    7(5x+6) - 8(2x − 1)

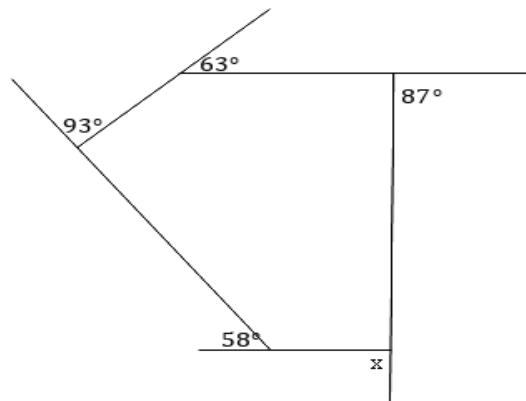Answer:……..……[2]

Q20. Find $2x - (-5x)$.

Answer:……..……[2]

Q21. If $r = u(v - w)$, find r when $u = -3$, $v = -6$ and $w = 5$

Answer:……....…[3]

Q22. Simplify: x(x + 2) − 2(x − 2)

Q23 Calculate *x*, giving reasons.

Answer:………...[3]

Q 24 A regular polygon has an interior angle sum of 1980°. Solve for *n*, the number of sides of the polygon.
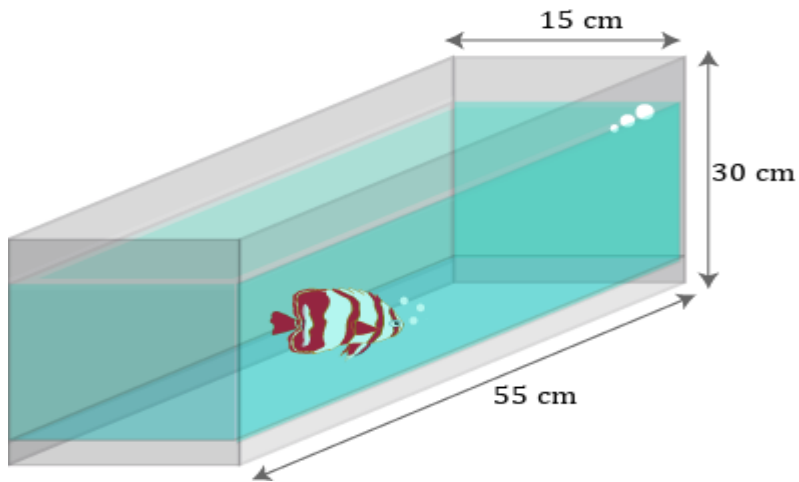
Answer:………...[3]

Q 25 Find the square root of 324 by prime factorization method.

Answer:………...[3]

Q26 How many rectangular packets, measuring 8cm by 6cm by 4cm, can be packed in a rectangular cardboard box measuring 30cm by 24cm by 16cm?
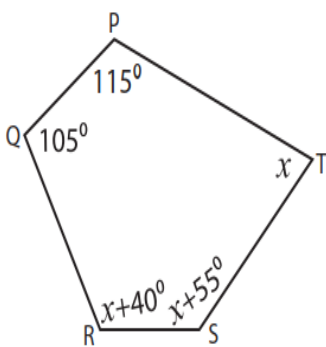
Q27 A classroom is 10m long, 8m wide and 3m high, How many students should it be used for if each student requires 5m^3 of air space?

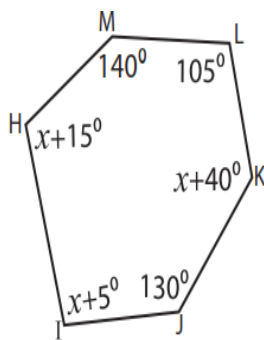**Q 28..** Find the maximum volume of water this aquarium can hold.

15 cm

30 cm

55 cm

Answer……….. cm³ [3]

Q 29. Find the sum of the interior angles and the missing angles of the irregular polygons below

P
115°
Q 105°
x T
x+40° x+55°
R S

Sum of the interior angles = _____

x = ___ ;∠R = ___ ;∠S = ___ ;∠T = ___

M
140° 105° L
H x+15°
x+40° K
x+5° 130°
I J

Sum of the interior angles = _____

x = ___ ;∠H = ___ ;∠I = ___ ;∠K = ___

G
120° 130° L
H x−40°
110° K
x−20°
I x−60°
J
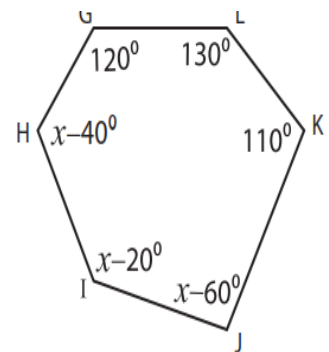
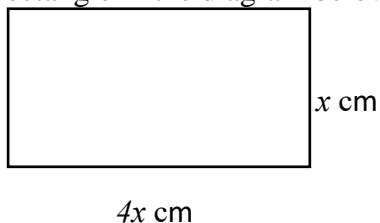Sum of the interior angles = _____

x = ___ ;∠H = ___ ;∠I = ___ ;∠J = ___

Q 30 Find the volume of the figure shown.
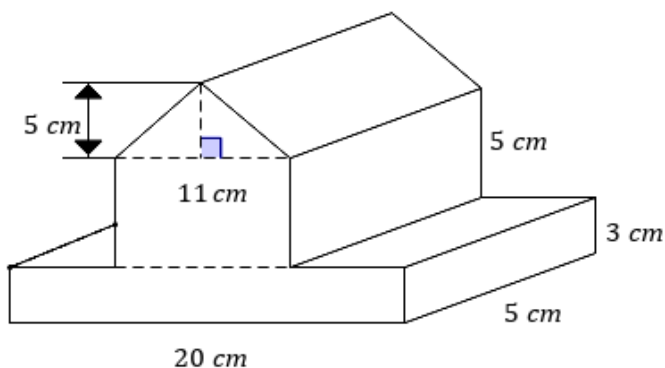
Answer:…………… .cm^3 [4]

Q 31 The area of the rectangle in the diagram below is 100 cm^2

x cm

$4x$ cm

a) Form an equation in x [2]

b) Solve the equation to find the length of a side [3]

Q31 Bobos hiring out his PS4 to his friends for 50Aed once of payment and 20Aed per day.
If one of his friends paid him 290Aed, how many days did the friend hire the PS?

Q32 An Emirate Taxi Charges 5Aed and 2Aed per km. If a client paid 307Aed for the taxi, what distance did client travel with the taxi?

Q33 Gigo thinks of a number and he calls it **K.** He triples it and he subtracts 7 the result is 20. Form an equation and solve it.