KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

GENERAL EDUCATION AND TRAINING (GET)

GRADE 8

MATHEMATICS

2024 UGU DISTRICT CONTROLLED TEST

TERM 3

NAME OF SCHOOL: _____

LEARNER NAME: _____

MARKS OBTAINED _____%

DURATION: $1\frac{1}{2}$ **HOURS**

MARKS: 60

Instructions to candidates

1. This paper consists of **TWO** sections, A and B.
2. Section A items are multiple choice type (MCQ). In order to respond to items in this section, you have to circle the letter corresponding to the correct answer.
3. Section B items are open ended and free response question types. **Use the spaces provided to respond to items in this section.**
4. NB. This question paper consists of 7 **pages including the cover page.**

SECTION A

QUESTION 1 **[5]**

1.1 $6(x+5)$ is equal to … (1)

A. $6x+5$
B. x^6+30
C. $30x+5$
D. $6x+30$

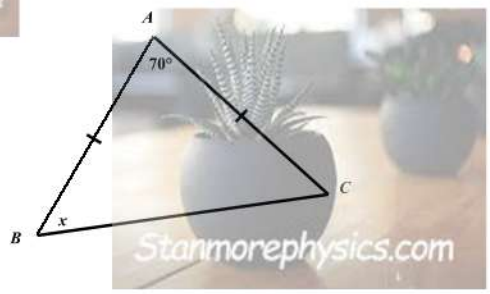
1.2 Solve for x, if $x+2=4$ (1)

A. $x=6$
B. $x=2$
C. $x=8$
D. $x=16$

1.3 The complimentary angle of 40° is … (1)

A. 140°
B. 40°
C. 50°
D. 320°

1.4 In ΔABC, the value of x is … (1)



A. 55°
B. 110°
C. 60°
D. 290°

1.5 Which statement is **not** true for a rhombus? (1)

A. All four sides are equal in length
B. Both pairs of opposite sides are equal and parallel
C. Both pairs of opposite angles are equal
D. All 4 interior angles are equal to 90°

QUESTION 2 [13]

2.1 Simplify the following:

2.1.1 $3x^2 + 4x - x^2 - 6x$ (2)

2.1.2 $3a(a^2 - 4a)$ (2)

2.1.3 $\dfrac{9x^2y - 12xy^2}{-3xy}$ (3)

2.1.4 $(4m + 10) \div 2 - m \times 2$ (3)

2.2 Calculate the value of the expression if $x = -1$

$7x^2 + 5x + 4$ (3)

QUESTION 3 **[12]**

3.1 Complete the table if: $y = 2x - 7$ (3)

x	1	-1	
y			-3

3.2 Solve the following equations.

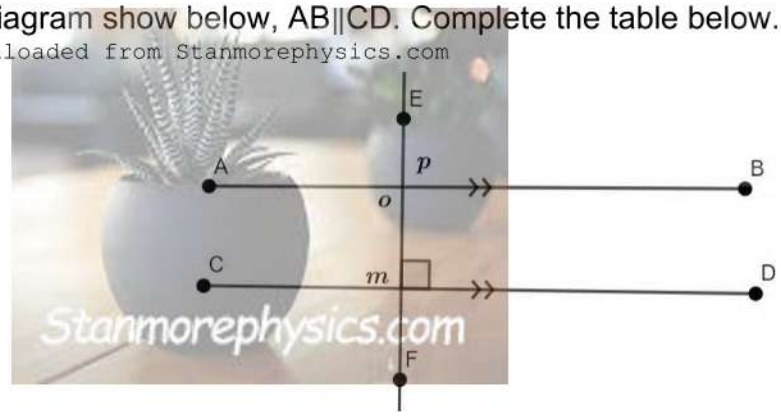
3.2.1 $3m - 7 = 11$ (3)

3.2.2 $3(m + 2) = 2(m - 1)$ (3)

3.2.3 $\frac{3x^2+6x}{3x} = 7$ (3)

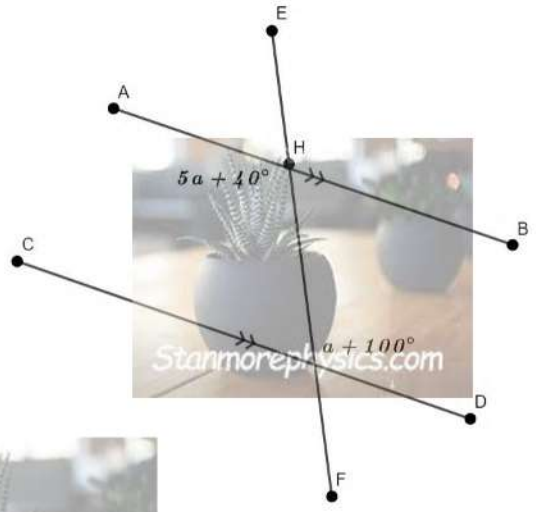
QUESTION 4 **[13]**

4.1 In the diagram show below, AB||CD. Complete the table below. (6)



	Statement	Reason
4.1.1	m = ...	.....
4.1.2	$m + o$ = ...	.....
4.1.3	p = ...	.....

4.2 In the diagram below, AB||CD.



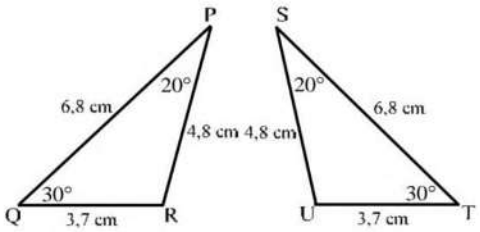
4.2.1 Calculate the value of a. (3)

4.2.2 Calculate the size of $A\hat{H}E$. (4)

QUESTION 5 **[17]**

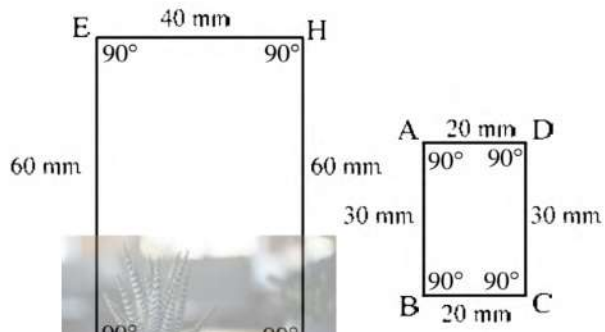
5.1 State with reasons whether the shapes below are similar or congruent.

5.1.1



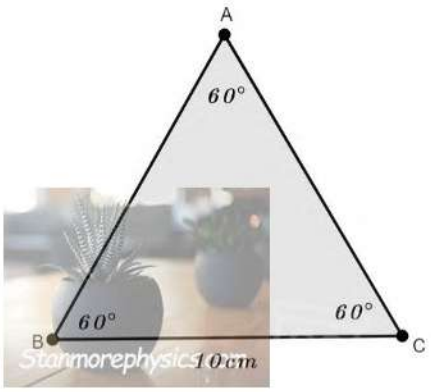
(2)

5.1.2



(2)

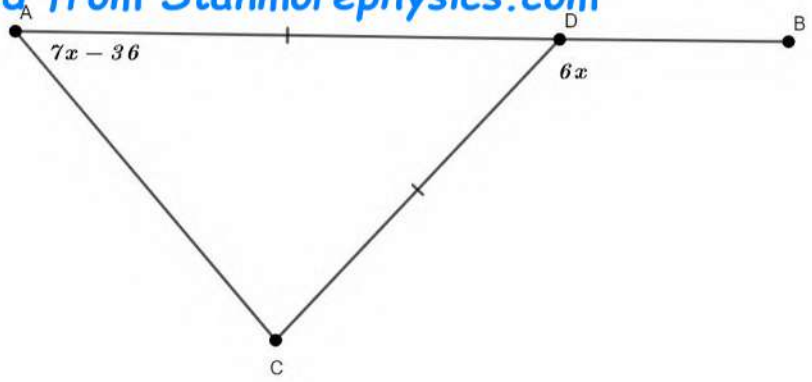
5.2 Consider the triangle below.



5.2.1 Name the type of triangle. (1)

5.2.2 Write down the length of AC and give a reason. (2)

5.3



ACD is an isosceles triangle with AB extended to B.
Calculate the value of x. (3)

5.4 [Square; Parallelogram; Kite; Trapezium]

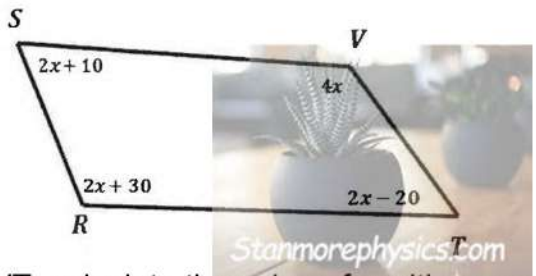
From the list above choose a name of the shape that is described by each of the 3 statements below.

5.4.1 Shape has 2 pairs of parallel sides and corners of 90° (1)

5.4.2 Shape has 1 pair of parallel sides (1)

5.4.3 Both pairs of adjacent sides are equal (1)

5.5 (4)



Given quadrilateral RSVT, calculate the value of x with reasons.

Total = 60

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QUESTION 1

1.1 D ✓
1.2 B ✓
1.3 C ✓
1.4 A ✓
1.5 D ✓

QUESTION 2

2.1) $2x^2 + 4x - x^2 - 6$

$=3x^2 - x^2 + 4x - 6x\surd$

$= 2x^2 - 2x\surd$

2.2) $3a\,(a^2 - 4a)$

$= (3a \times a^2) + (3a \times -4a)$ ✓

$= 3a^3 - 12a^2$ ✓

2.3) $\frac{9x^2 - 12xy^2}{-3xy}$

$= \frac{9x^2y}{-3xy} - \frac{12xy^2}{-3xy}$ ✓

$= 3x + 4y$ ✓✓

2.4) $(4m + 10) \div 2 - m \times 2$

$= 2m + 5 - 2m$ ✓✓

$= 5$ ✓

2.5) $7x^2 + 5x + 4$

$= 7(-1)^2 + 5(-1) + 4$ ✓

$= 7 - 5 + 4$ ✓

$=6$ ✓

QUESTION 3

3.1 $y = 2x - 7$

x	1	-1	2✓
y	-5✓	-9✓	-3

3.2.1 $3m - 7 + 7 = 11 + 7$ ✓

$3m = 18$

$\frac{3m}{m} = \frac{18}{3}$ ✓

$m = 6$ ✓

3.2.2 $\frac{3x^2+6x}{3x} = 7$

$\frac{3x^2}{3x} + \frac{6x}{3x} = 7$ ✓

$x + 2 = 7$ ✓

$x = 5$ ✓

3.2.3 $3(m + 2) = 2(m - 1)$

$3m + 6 = 2m - 2$ ✓

$3m + 6 - 2m = 2m - 2 - 2m$ ✓

$m + 6 = -2$

$m + 6 - 6 = -2 - 6$

$m = -8$ ✓

Question 4

4.1.1 M=90° ✓ Adjacent angles on a straight line ✓

4.1.2 M+O =180° ✓ Co-interior angles, AB||CD ✓

4.1.3 p = 90° ✓ Corresponding angles, AB||CD ✓

4.2.1 $5a + 40° = a + 100°$ ✓ Alternate angles, AB||CD ✓

$5a - a = 100° - 40°$

$\frac{4a}{4} = \frac{60°}{4}$

$a = 15°$ ✓

4.2.2 $A\hat{H}E + 5a + 40° = 180°$ ✓ Angles of a straight line ✓

$A\hat{H}E + 5(15°) + 40° = 180°$ ✓

$A\hat{H}E + (115°) = 180°$

$A\hat{H}E = 180° - 115°$

$A\hat{H}E = 65°$ ✓

Question 5

5.1.1 Congruent ✓All corresponding sides are equal. ✓

5.1.2 EFGH|||ABCD ✓

-All the corresponding angles are equal ✓

or

- Corresponding sides are in proportion ✓

5.2.1) Equilateral Triangle ✓

5.2.2) AC=10cm ✓ All sides of an equilateral Δ are equal ✓

5.3) $7x - 36° + 7x - 36° = 6x$ ✓ Exterior angle of a triangle ✓

$14x - 6x = 72°$

$8x = 72°$

$\frac{8x}{8} = \frac{72°}{8}$

$x = 9°$ ✓

5.4.1) Square ✓

5.4.2) Trapezium ✓

5.4.3) kite ✓

5.5) $2x + 10° + 4x + 2x + 30° + 2x - 20° = 360°$ ✓ sum of angles in a quad✓

$$2x + 4x + 2x + 2x + 10° + 30° - 20° = 360°$$

$$10x + 20° - 20 = 360° - 20\checkmark$$

$$\frac{10x}{10} = \frac{340}{10}$$

$$x = 34°\checkmark$$

Total 60