

MATHEMATICS • M2L1 Angles of Polygons

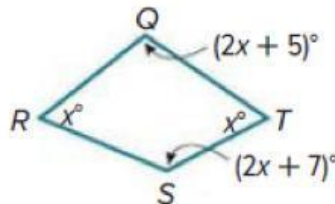
Multiple-Choice Assessment

Ministry of Education	Badaa Al Mutawa School
Student Name:	_____
Grade:	_____ Date: _____
Subject: Mathematics	Subject Teacher: Abdulkader Amro

Instructions: Choose the one correct answer for each question. The question number in parentheses is the original exercise number from the supplied pages.

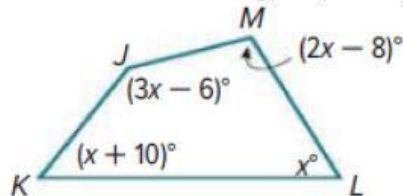
A. Interior Angles & Regular Polygons

1. [Original #1] Find the measures of the four interior angles in the quadrilateral shown: x° , x° , $(2x + 5)^\circ$, and $(2x + 7)^\circ$.



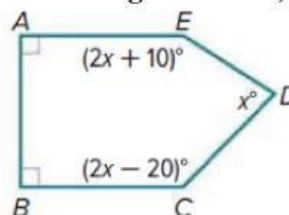
- A. 62° , 119° , 62° , 117°
- B. 58° , 121° , 58° , 123°
- C. 56° , 117° , 56° , 131°
- D. 60° , 125° , 60° , 115°

2. [Original #2] Find x in the quadrilateral shown with interior angles $(3x - 6)^\circ$, $(2x - 8)^\circ$, $(x + 10)^\circ$, and x° .



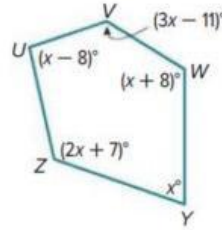
- A. 50°
- B. 56°
- C. 52°
- D. 54°

3. [Original #3] Find x in the pentagon shown. Its interior angles are 90° , 90° , $(2x + 10)^\circ$, $(2x - 20)^\circ$, and x° .



- A. 78°
- B. 74°
- C. 76°
- D. 72°

4. [Original #4] Find x in the pentagon shown. Its interior angles are $(x - 8)^\circ$, $(3x - 11)^\circ$, $(x + 8)^\circ$, x° , and $(2x + 7)^\circ$.



5. [Original #9] A regular polygon has an interior angle of 144° . How many sides does the polygon have?

- A. 12
- B. 9
- C. 8
- D. 10

6. [Original #10] A regular polygon has an interior angle of 156° . How many sides does the polygon have?

- A. 12
- B. 18
- C. 20
- D. 15

7. [Original #11] A regular polygon has an interior angle of 160° . How many sides does the polygon have?

- A. 16
- B. 20
- C. 18
- D. 15

8. [Original #12] A regular polygon has an interior angle of 108° . How many sides does the polygon have?

- A. 5
- B. 6
- C. 8
- D. 4

9. [Original #13] A regular polygon has an interior angle of 120° . How many sides does the polygon have?

- A. 8
- B. 5
- C. 10
- D. 6

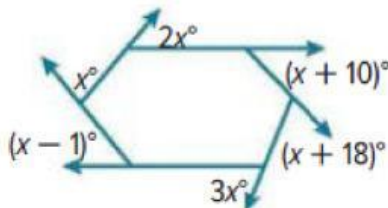
10. [Original #14] A regular polygon has an interior angle of 150° . How many sides does the polygon have?

- A. 15
- B. 12
- C. 18
- D. 10

B. Exterior Angles

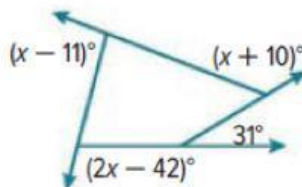
11. [Original #15] In the diagram, the exterior angles are x° , $2x^\circ$, $(x + 10)^\circ$, $(x + 18)^\circ$, $3x^\circ$, and $(x - 1)^\circ$. Find x .

- A. 35°
- B. 39°
- C. 37°
- D. 41°



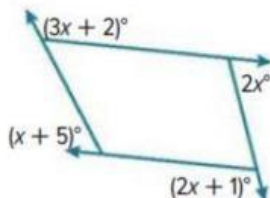
12. [Original #16] In the diagram, the exterior angles are $(x - 11)^\circ$, $(x + 10)^\circ$, 31° , and $(2x - 42)^\circ$. Find x .

- A. 92°
- B. 91°
- C. 93°
- D. 94°



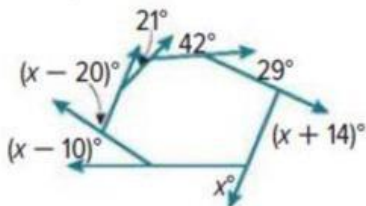
13. [Original #17] In the diagram, the exterior angles are $(3x + 2)^\circ$, $2x^\circ$, $(x + 5)^\circ$, and $(2x + 1)^\circ$. Find x .

- A. 42°
- B. 43°
- C. 44°
- D. 45°



14. [Original #18] In the diagram, the exterior angles are $(x - 20)^\circ$, 21° , 42° , 29° , $(x + 14)^\circ$, x° , and $(x - 10)^\circ$. Find x .

- A. 71°
- B. 70°
- C. 69°
- D. 72°



15. [Original #19] What is the measure of each exterior angle of a regular pentagon?

- A. 108°
- B. 75°
- C. 60°
- D. 72°

16. [Original #20] What is the measure of each exterior angle of a regular 15-gon?

- A. 30°
- B. 18°
- C. 24°
- D. 36°

17. [Original #21] What is the measure of each exterior angle of a regular hexagon?

- A. 90°
- B. 60°
- C. 45°
- D. 72°

18. [Original #22] What is the measure of each exterior angle of a regular octagon?

- A. 45°
- B. 60°
- C. 40°
- D. 30°

C. Regular Polygon Exterior Angles

19. [Original #23] What is the measure of each exterior angle of a regular nonagon?

- A. 45°
- B. 40°
- C. 60°
- D. 36°

20. [Original #24] What is the measure of each exterior angle of a regular 12-gon?

- A. 24°
- B. 30°
- C. 45°
- D. 36°

21. [Original #25] A regular 7-gon has what measures for one exterior angle and one interior angle? Round to the nearest tenth.

- A. 52.5° and 127.5°
- B. 51.4° and 128.6°
- C. 50.0° and 130.0°
- D. 54.0° and 126.0°

22. [Original #26] A regular 13-gon has what measures for one exterior angle and one interior angle? Round to the nearest tenth.

- A. 28.0° and 152.0°
- B. 26.7° and 153.3°
- C. 27.7° and 152.3°
- D. 30.0° and 150.0°

23. [Original #27] A regular 14-gon has what measures for one exterior angle and one interior angle? Round to the nearest tenth.

- A. 26.4° and 153.6°
- B. 24.7° and 155.3°
- C. 25.7° and 154.3°
- D. 25.0° and 155.0°

24. [Original #28] A convex octagon has interior angles $(x + 55)^\circ$, $(3x + 20)^\circ$, $4x^\circ$, $(4x - 10)^\circ$, $(6x - 55)^\circ$, $(3x + 52)^\circ$, $3x^\circ$, and $(2x + 30)^\circ$. Find x .

- A. 38
- B. 40
- C. 42
- D. 36

D. Mixed Exercises

25. [Original #29] A convex hexagon has interior angles x° , $(5x - 103)^\circ$, $(2x + 60)^\circ$, $(7x - 31)^\circ$, $(6x - 6)^\circ$, and $(9x - 100)^\circ$. Find x .

- A. 30
- B. 32
- C. 34
- D. 28

26. [Original #30] A decagon has interior angles $(x + 5)^\circ$, $(x + 10)^\circ$, $(x + 20)^\circ$, $(x + 30)^\circ$, $(x + 35)^\circ$, $(x + 40)^\circ$, $(x + 60)^\circ$, $(x + 70)^\circ$, $(x + 80)^\circ$, and $(x + 90)^\circ$. What are the measures of the ten interior angles?

- A. 105° , 110° , 120° , 130° , 135° , 140° , 160° , 170° , 180° , 200°
- B. 105° , 110° , 120° , 130° , 135° , 140° , 160° , 170° , 185° , 185°
- C. 100° , 105° , 115° , 125° , 130° , 135° , 155° , 165° , 175° , 185°
- D. 105° , 110° , 120° , 130° , 135° , 140° , 160° , 170° , 180° , 190°

27. [Original #31] A polygon ABCDE has interior angles $6x^\circ$, $(4x + 13)^\circ$, $(x + 9)^\circ$, $(2x - 8)^\circ$, and $(4x - 1)^\circ$. What are the measures of its interior angles?

- A. 186° , 139° , 40° , 52° , 123°
- B. 180° , 135° , 45° , 55° , 125°
- C. 186° , 137° , 40° , 54° , 123°
- D. 174° , 137° , 42° , 54° , 133°

28. [Original #32] Find the measure of each exterior angle of a regular $2x$ -gon.

- A. $\frac{360^\circ}{2x}$
- B. $\frac{720^\circ}{x}$
- C. $\frac{360^\circ}{x}$
- D. $\frac{180^\circ}{x}$

29. [Original #33] Find the sum of the measures of the exterior angles of a convex 65-gon.

- A. 540°
- B. 180°
- C. 360°
- D. $11,700^\circ$