Geometry

School Closing Work Packet

Attached you will find 80 practice questions and a vocabulary project. For each day that school is

[redacted]

B. 75 **C. 56** **D. 42**

F

$(9x + 19)^\circ$

D $(6x)^\circ$ 56° E

Mathematical Calculation Example:

$6x + 9x + 19 + 56 = 180$

$15x + 75 = 180$

$15x = 105$

$x = 7$

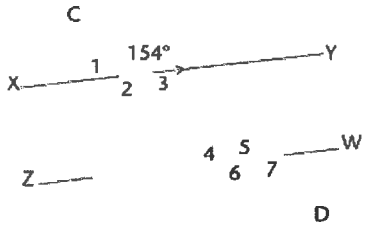
$m\angle D = 6x$

$m\angle D = 6(7)$

$m\angle D = 42$

The answer is D.

2. What is the measure of angle 5? **A. 15** **B. 26** **C. 64** **D. 154**

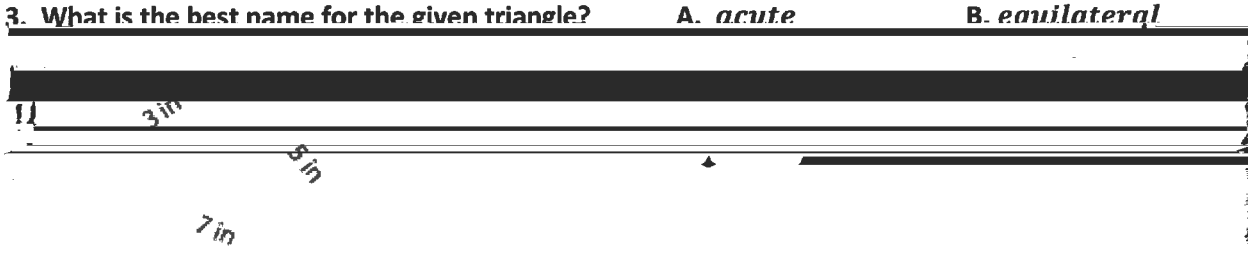


Explaining the correct answer choice

D is the answer.

The given angle and angle 5 are corresponding angles.

3. What is the best name for the given triangle? **A. *acute*** **B. *equilateral***



C. *isosceles* **D. *scalene***

[redacted]

Name
Period

[redacted]

Pro ect Descri tion: Create a picture book using 20 geometry terms from the given list.

Task:

Acute Angle	Line Segment	Rectangle	Translation
Congruent	Midpoint	Reflection	Trapezoid
Diagonal	Obtuse Angle	Rhombus	Trig Ratios
Dilation	Parallel	Right Angle	Vertical Angles

[redacted]

are

Equilateral	Parallelogram	Rotation	X-axis
Isosceles	Perpendicular	Scalene	Y-axis
Horizontal	Quadrilateral	Square	

a. Each page must include:
    a. The term
    b. The definition

[redacted]

Name: **Date:**

1. Which pair of angles x and y are supplementary?

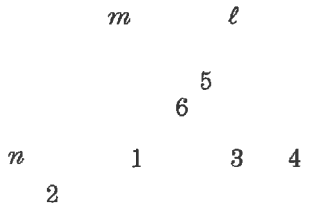
   A. $m\angle x = 113$, $m\angle y = 67$

   B. $m\angle x = 76$, $m\angle y = 14$

   C. $m\angle x = 140$, $m\angle y = 190$

   D. $m\angle x = 180$, $m\angle y = 180$

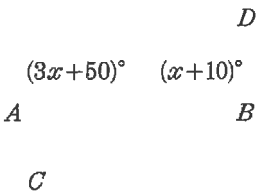
2. In the accompanying figure, ℓ, m, and n are lines with $\ell \perp m$. Which angles are complementary?



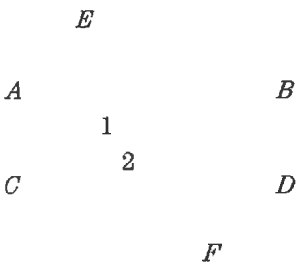
   A. 1 and 3

   B. 1 and 2

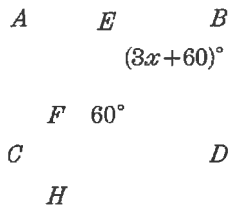
3. In the accompanying diagram, the adjacent angles formed by intersecting lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ have measures of $3x + 50$ and $x + 10$. Find x.

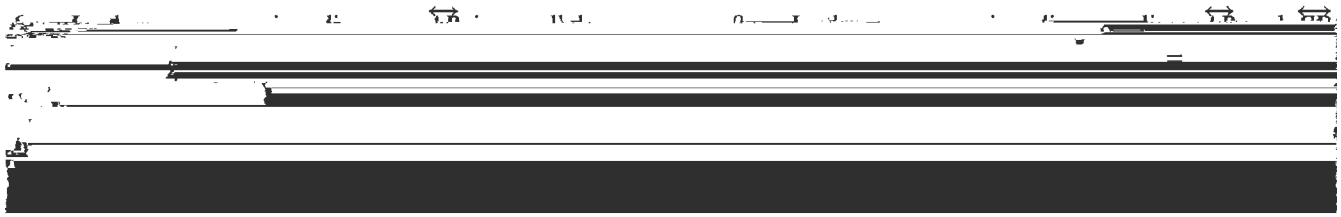


4. In the accompanying diagram, parallel lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are cut by transversal $\overleftrightarrow{EF}$. If $m\angle 2 = 72$, what is $m\angle 1$?



5. In the accompanying diagram, parallel lines $\overleftrightarrow{AB}$





D B

C (x+80)° H D

F

9. In the accompanying diagram, $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ intersect at E, and $m\angle AED = 3x + 15$. If $m\angle CEB = 2x + 50$,

(3x+15)°

E
(2x+50)°

C B

7. In the accompanying diagram, parallel lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are intersected by transversal $\overleftrightarrow{EF}$ at points G and H, respectively. If the measure of angle EGB is $3x$ and the measure of angle CHF is 84, find the value of x.

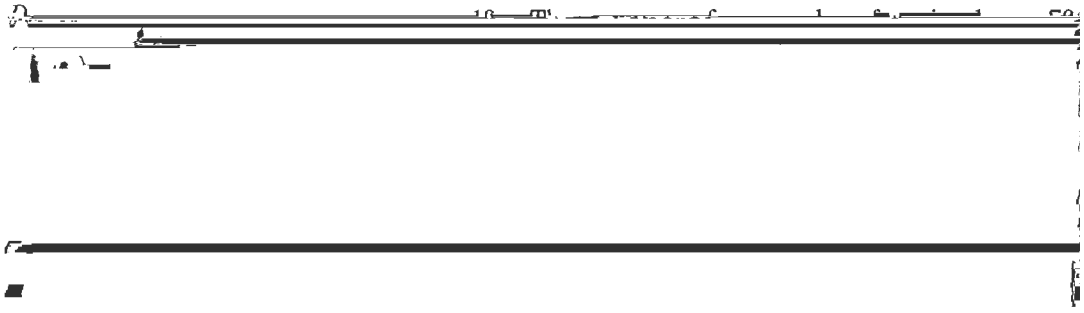
A E (3x)° B

G

C D

84° H

F

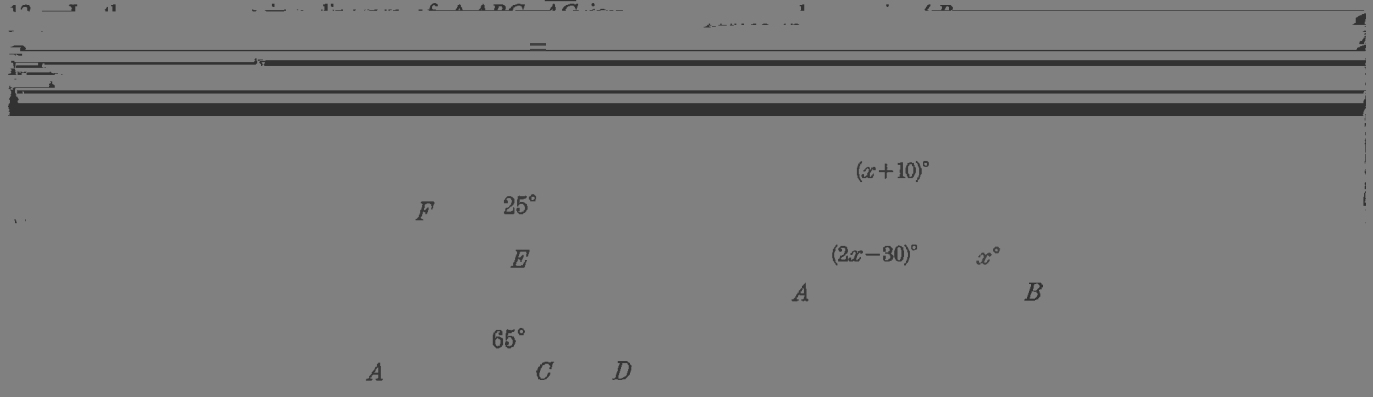


11. If two angles of a triangle measure 43° and 48°, the triangle is

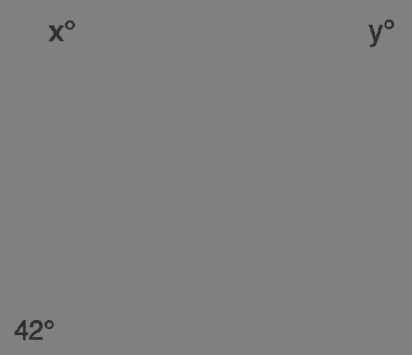
A. acute
B. obtuse
C. isosceles
D. right

12. If two angles of one triangle are congruent to two angles of of another triangle, these triangles *must* be

A. similar
B. congruent
C. scalene
D. isosceles



14. Tina wants to sew a piece of fabric into a scarf in the shape of an isosceles triangle, as shown in the accompanying diagram. What are the values of x and y?



A. $x = 42$ and $y = 96$
B. $x = 69$ and $y = 69$
C. $x = 90$ and $y = 48$
D. $x = 96$ and $y = 42$

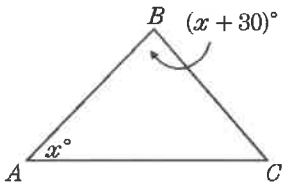
15. In the accompanying diagram, $m\angle A = 2x - 30$, $m\angle B = x$, and $m\angle C = x + 10$. Find the number of

16. In the accompanying diagram of isosceles triangle ABC, $\overline{AB} \cong \overline{BC}$, $m\angle BAC = x$, and $m\angle ABC = x + 30$.

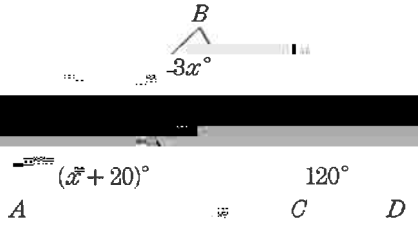
What is the value of x?

A. 80 B. 75

C. 50 D. 30



17. In the accompanying diagram, $m\angle A = x + 20$, $m\angle B = 3x$, $\angle BCD$ is an exterior angle formed by extending $\overline{AC}$ to point D, and $m\angle BCD = 120$. Find the value of x.



18. In $\triangle ABC$, $m\angle A = 95$, $m\angle B = 50$, and $m\angle C = 35$. Which expression correctly relates the lengths

19. In $\triangle PQR$, $PQ = 8$, $QR = 12$, and $RP = 13$. Which statement about the angles of $\triangle PQR$ must be true?

A. $m\angle Q > m\angle P > m\angle R$

B. $m\angle Q > m\angle R > m\angle P$

C. $m\angle R > m\angle P > m\angle Q$

D. $m\angle P > m\angle R > m\angle Q$

20. Which set of numbers could not represent the lengths of the sides of a right triangle?

A. {3, 4, 5} B. {6, 9, 12}

C. {5, 12, 13} D. {8, 15, 17}

21. What is the sum of the measures of the exterior angles of a regular pentagon?

A. 180° B. 360° C. 540° D. 720°

A. rectangle B. trapezoid

C. rhombus D. parallelogram

23. If the diagonals of a parallelogram are perpendicular but *not* congruent, then the parallelogram is

A. a rectangle

B. a rhombus

C. a square

D. an isosceles trapezoid

24. In quadrilateral $ABCD$, $m\angle A = 72$, $m\angle B = 94$, and $m\angle C = 113$. What is $m\angle D$?

A. 81 B. 86 C. 108 D. 136

25. All of the following figures must have congruent diagonals *except*

A. a rectangle

B. a square

C. an isosceles trapezoid

D. a parallelogram

26. As shown in the accompanying diagram, a rectangular gate has two diagonal supports. If $m\angle 1 = 42$, what is $m\angle 2$?

1

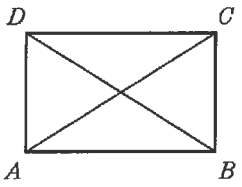
2

27. For which polygon does the sum of the measures of the interior angles equal the sum of the measures of the exterior angles?

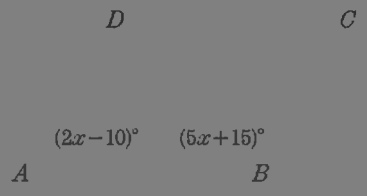
A. hexagon B. pentagon

C. quadrilateral D. triangle

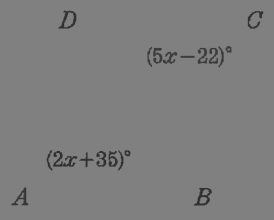
28. In rectangle $ABCD$, diagonal $AC = x + 10$ and diagonal $BD = 2x - 30$. Find the value of x.



29. In the accompanying diagram of parallelogram $ABCD$, $m\angle A = 2x - 10$ and $m\angle B = 5x + 15$. Find x.



30. In the accompanying figure, $ABCD$ is a parallelogram, $m\angle A = 2x + 35$, and $m\angle C = 5x - 22$. Find the value of x.



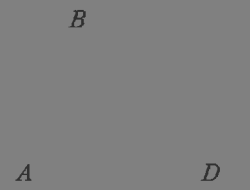
31. Two adjacent sides of a rhombus are represented by $5x + 7$ and $6x - 1$. Find the value of x.

32. If the length of the side of a rhombus is represented by $x + 3$, which expression represents the perimeter of the rhombus?

A. $4x + 3$ B. $4x + 12$

C. $x^2 + 9$ D. $x^2 + 6x + 9$

33. In the accompanying figure, $ABCD$ is a parallelogram. Which statement must be true?



A. The sum of the measures of the four angles is 180°.

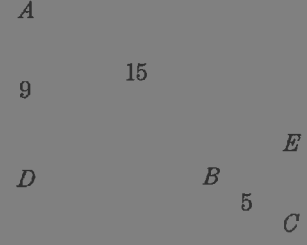
B. Angles A and B are complementary.

C. Angles A and B are congruent.

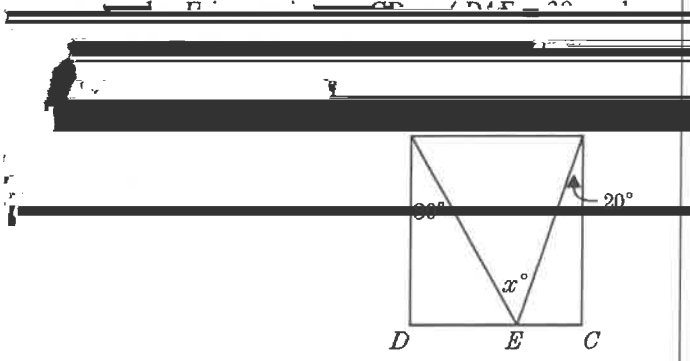
34. The sum of the measures of the interior angles of a hexagon is

A. 360 B. 540 C. 720 D. 1280

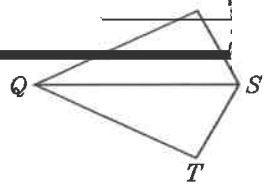
35. In the accompanying figure, $\overleftrightarrow{ABC}$, $\overline{AD} \perp \overline{DE}$, $\overline{CE} \perp \overline{DE}$, $AD = 9$, $AB = 15$, and $BC = 5$. Find CE.



36. In the accompanying diagram, $ABCD$ is a



39. In the accompanying diagram of quadrilateral



40. In the diagram of $\triangle ABC$ and $\triangle DEF$ below, $\overline{AB} \cong \overline{DE}$, $\angle A \cong \angle D$, and $\angle B \cong \angle E$.

A F D C B E

Which method can be used to prove $\triangle ABC \cong \triangle DEF$?

A. SSS B. SAS C. ASA D. HL

37. If $\triangle RST \sim \triangle ABC$, $m\angle A = x^2 - 8x$, $m\angle C = 4x - 5$, and $m\angle R = 5x + 30$, find $m\angle C$.

38. In the accompanying diagram of quadrilateral $ABCD$, diagonal $\overline{AC}$ bisects $\angle BAD$ and $\angle BCD$. Which statement can be used to prove that $\triangle ABC \cong \triangle ADC$?

A. HL $\cong$ HL

B. SSS $\cong$ SSS

C. ASA $\cong$ ASA

D. SAS $\cong$ SAS

B A C D

41. If $\triangle JKL \cong \triangle MNO$, which statement is always true?

C. $\overline{JL} \cong \overline{MO}$ D. $\overline{JK} \cong \overline{ON}$