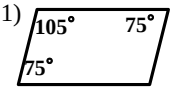
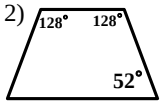
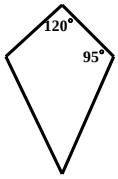
Warmup: Angles in Quadrilaterals

Calculator and Whiteboard (not Giant)

For 1-3, find all the missing angle measures.

1) 

2) 

3) 

Homework Answers
pg. 1249 (1-4, 7-10, 15, 17)

1. $m\angle ABE$

$m\angle ABE + m\angle BAE = 90°$
$m\angle ABE + 28° = 90°$
$m\angle ABE = 62°$

2. $m\angle CBE$

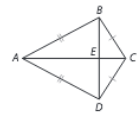
$m\angle BCE + m\angle CBE = 90°$
$57° + m\angle CBE = 90°$
$m\angle CBE = 33°$

3. $m\angle ABC$

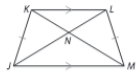
$m\angle ABC = m\angle ABE + m\angle CBE$
$= 62° + 33°$
$= 95°$

4. $m\angle ADC$

$\angle ADC \cong \angle ABC$
$m\angle ADC = m\angle ABC$
$m\angle ADC = 95°$

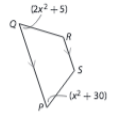


7. $LJ = 19.3$ and $KN = 8.1$. Determine MN.



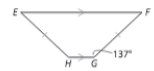
$\overline{LJ} \cong \overline{KM}$; $LJ = KM$; $19.3 = KM$;
$KN + MN = KM$; $8.1 + MN = 19.3$; $MN = 11$

8. Find the positive value of x so that trapezoid $PQRS$ is isosceles.



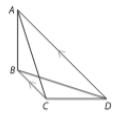
$\angle Q \cong \angle P$
$m\angle Q = m\angle P$
$2x^2 + 5 = x^2 + 30$
$x^2 = 25$
$x = 5$

9. In isosceles trapezoid $EFGH$, use the Same-Side Interior Angles Postulate to determine $m\angle E$.



$\angle G \cong \angle H$; $m\angle G = m\angle H$; $137° = m\angle H$
$m\angle E + m\angle H = 180°$; $m\angle E + 137° = 180°$;
$m\angle E = 43°$

10. $AC = 3y + 12$ and $BD = 27 - 2y$. Determine the value of y so that trapezoid $ABCD$ is isosceles.

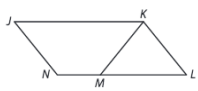


$\overline{AC} \cong \overline{BD}$
$AC = BD$
$3y + 12 = 27 - 2y$
$5y = 15$
$y = 3$

15. Determine whether each of the following describes a kite or a trapezoid. Select the correct answer for each lettered part.

A. Has two distinct pairs of congruent consecutive sides	● kite	○ trapezoid
B. Has diagonals that are perpendicular	● kite	○ trapezoid
C. Has at least one pair of parallel sides	○ kite	● trapezoid
D. Has exactly one pair of opposite angles that are congruent	● kite	○ trapezoid
E. Has two pairs of base angles	○ kite	● trapezoid

17. Given: $JKLN$ is a parallelogram. $JKMN$ is an isosceles trapezoid.
Prove: $\triangle KLM$ is an isosceles triangle.



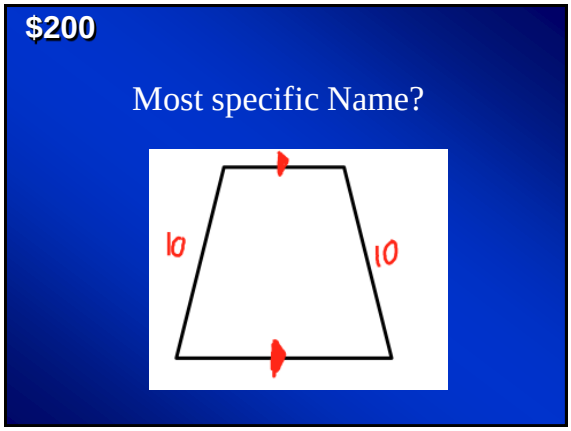
1. $JKLN$ is a parallelogram. (Given); 2. $\overline{KL} \cong \overline{NJ}$ (Opposite sides of a parallelogram are congruent.);
3. $JKMN$ is an isosceles trapezoid. (Given); 4. $\overline{NJ} \cong \overline{MK}$ (Definition of isosceles trapezoid);
5. $\overline{KL} \cong \overline{KM}$ (Transitive Property of Congruence); 6. $\triangle KLM$ is an isosceles triangle. (Definition of isosceles triangle)

Quiz Tomorrow

- Know everything on the review sheet
  - All Properties of Quadrilaterals
- Know how to do proofs with diagonals and match statements and reasons in a proof

Quadrilaterals!

Jeopardy!



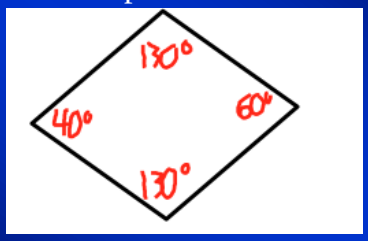
$200

Isosceles Trapezoid

Scores

$300

Most specific Name?



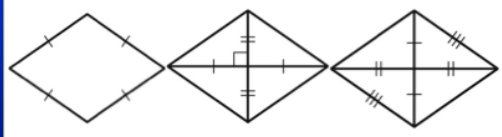
$300

Kite

Scores

$400

Which is not necessarily a rhombus?



A B C

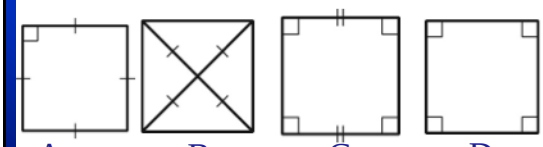
$400

C

Scores

$500

Which MUST be a square?



A B C D

$500

A

Scores

$100

$100

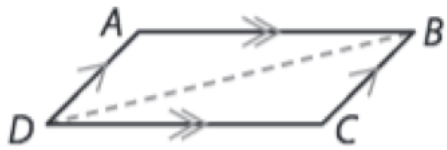
Scores

$200

Given: $ABCD$ is a parallelogram.

Prove: $\overline{AB} \cong \overline{CD}$ and $\overline{AD} \cong \overline{CB}$

(Prove that opposite sides are congruent)

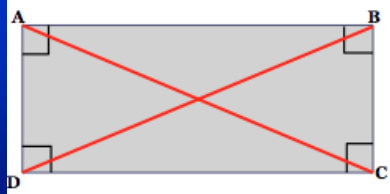


$200

Scores

$300

Prove: $AC \cong BD$



$300

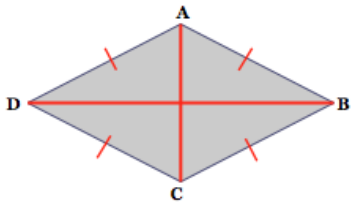
Scores

Daily Double

Scores

$400

Prove: $AC \perp BD$

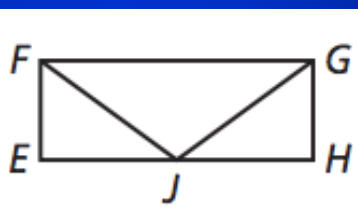


$400

Scores

$500

Given: $EFGH$ is a rectangle. J is the midpoint of $\overline{EH}$.
Prove: $\triangle FJG$ is isosceles.



$500

Scores

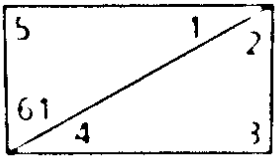
$100

$100

Scores

$200

This is a rectangle. Find the value of all numbered angles



$200

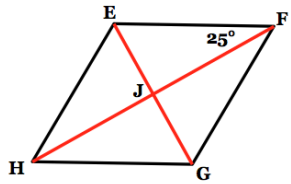
1 - 29
2 - 61
3 - 90
4 - 29
5 - 90

Scores

$300

EFGH is a rhombus. Find each value.

1) $m\angle FHG$
2) $m\angle EGH$
3) $m\angle HEF$

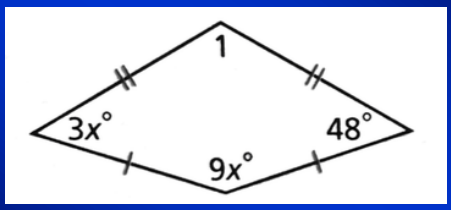


$300

1) 25
2) 65
3) 130

Scores

$400



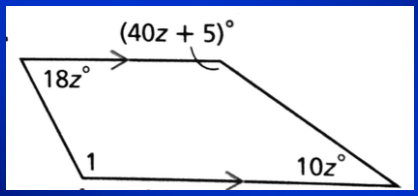
$400

120

Scores

$500

Find the measure of angle 1



$500

117

Scores

$100

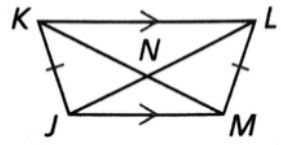
$100

Scores

$200

Find KM.

$JN = 10.6$, and $NL = 14.8$.



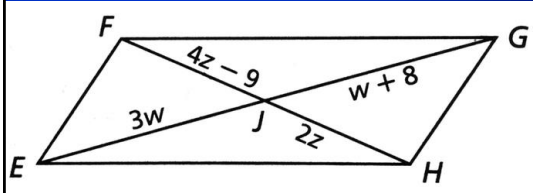
$200

25.4

Scores

$300

Find the value of
w and z



$300

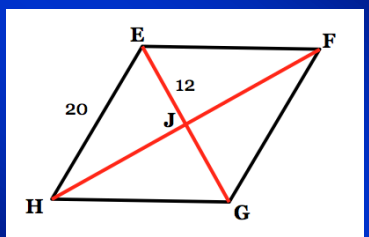
w = 4
z = 4.5

Scores

$400

EFGH is a rhombus.

JF



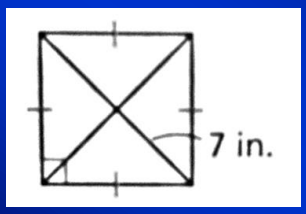
$400

16

Scores

$500

Find the Perimeter. Round to the nearest tenth.



$500

39.6 in

Scores

$100

$100

Scores

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