

Review - Parallel Lines and Angles

Confident

Need to Study

I can solve problems using the segment addition postulate and angle addition postulate.	4	3	2	1
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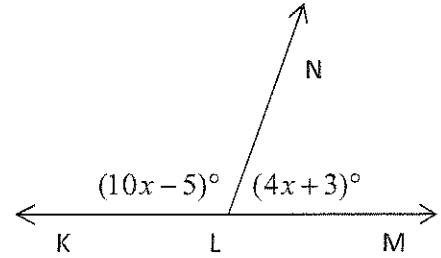
1. Given that $m\angle KLM = 180^\circ$, find $m\angle KLN$ and $m\angle NLM$.

$$10x - 5 + 4x + 3 = 180$$

$$14x - 2 = 180$$

$$x = 13$$

$$m\angle KLN = 10(13) - 5 = 125^\circ \quad m\angle NLM = 180 - 125 = 55^\circ$$



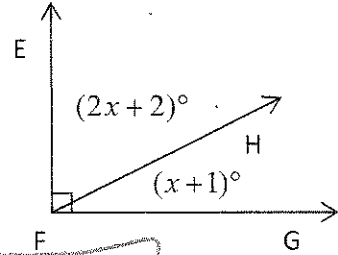
2. Given that $m\angle EFG$ is a right angle, find $m\angle EFH$ and $m\angle HFG$.

$$2x + 2 + x + 1 = 90$$

$$3x + 3 = 90$$

$$x = 29$$

$$m\angle EFH = 2(29) + 2 = 60^\circ \quad m\angle HFG = 90 - 60 = 30^\circ$$



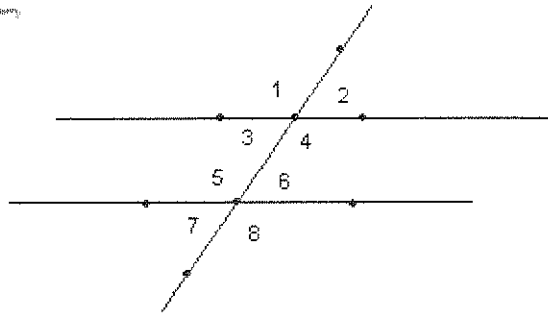
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Need to Study

I can list angles that form straight angles from a diagram.	4	3	2	1
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3. List 2 pairs of straight angles in the diagram below.

$\angle 1 + \angle 2$
 $\angle 3 + \angle 4$



More, just in case... $\angle 1 + \angle 3$ / $\angle 5 + \angle 6$ / $\angle 6 + \angle 8$
 $\angle 2 + \angle 4$ / $\angle 5 + \angle 7$ / $\angle 7 + \angle 8$

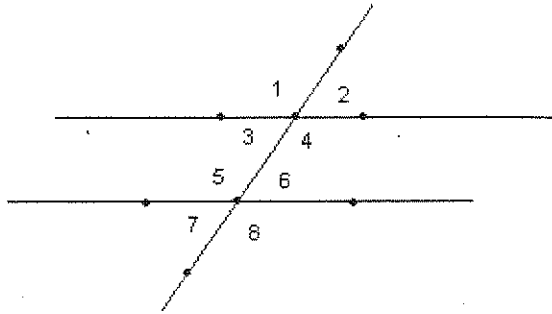
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Need to Study

I can list pairs of vertical angles from a diagram.	4	3	2	1
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4. List all of the pairs of vertical angles in the diagram below.

$\angle 1$ & $\angle 4$
 $\angle 2$ & $\angle 3$
 $\angle 5$ & $\angle 8$
 $\angle 6$ & $\angle 7$



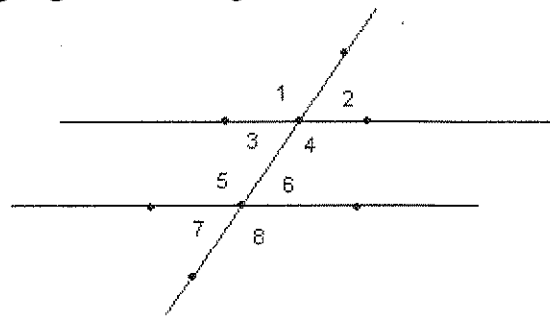
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Need to Study

I can list pairs of corresponding angles from a diagram.	4	3	2	1
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5. List all of the pairs of corresponding angles in the diagram below.

$\angle 1$ & $\angle 5$
 $\angle 2$ & $\angle 6$
 $\angle 3$ & $\angle 7$
 $\angle 4$ & $\angle 8$



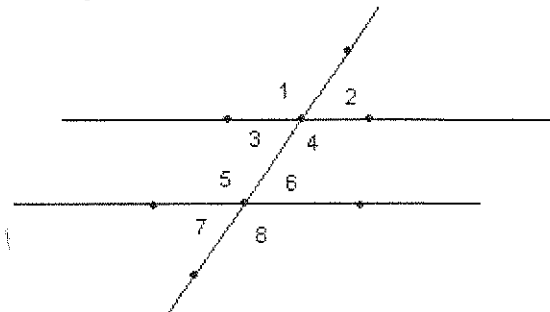
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Need to Study

I can list pairs of alternate interior angles from a diagram.	4	3	2	1
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6. List all of the pairs of alternate interior angles from the diagram below.

$\angle 3$ & $\angle 6$
 $\angle 4$ & $\angle 5$



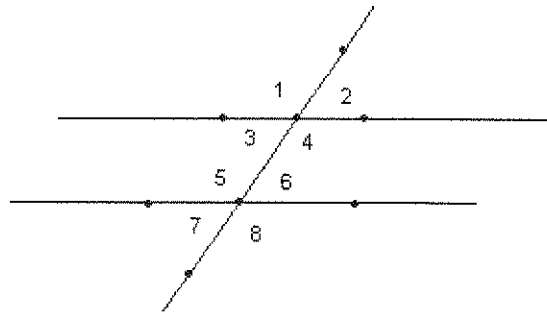
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I can list pairs of same side interior angles from a diagram.	4	3	2	1
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7. List all of the pairs of same side interior angles from the diagram below.

$\angle 3 + \angle 5$
 $\angle 4 + \angle 6$

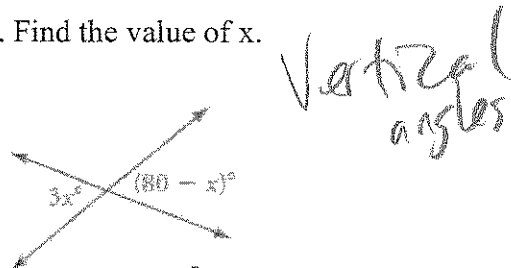


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Need to Study

I can solve problems using angles in a diagram.	4	3	2	1
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8. Find the value of x.



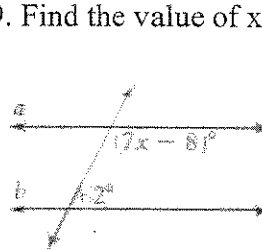
Vertical angles

$$3x = 80 - x$$

$$4x = 80$$

$$x = 20$$

9. Find the value of x.



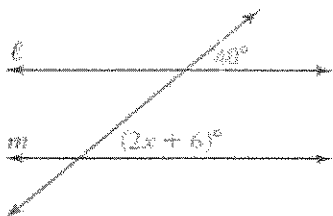
Same side interior

$$7x - 8 + 62 = 180$$

$$7x + 54 = 180$$

$$x = 18$$

10. Find the value of x.



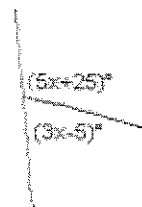
Corresponding

$$40 = 2x + 6$$

$$2x = 34$$

$$x = 17$$

11. Find the value of x.



Straight angles

$$5x + 25 + 3x - 5 = 180$$

$$8x + 20 = 180$$

$$x = 20$$

Confident

Need to Study

I can use angle relationships to tell if lines are parallel.	4	3	2	1
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For #'s 12-14

A) Circle parallel or not parallel for lines m and n based upon the angle measures given.

B) What angle relationship justifies your answer?

12. $m\angle 1 = 35^\circ$ and $m\angle 3 = 145^\circ$

Parallel

not parallel

Angle Relationship Same side int angles

13. $m\angle 2 = 120^\circ$ and $m\angle 4 = 60^\circ$

Parallel

not parallel

Angle Relationship Corresponding angles w/ parallel lines should be equal

14. $m\angle 2 = 115^\circ$ and $m\angle 3 = 115^\circ$

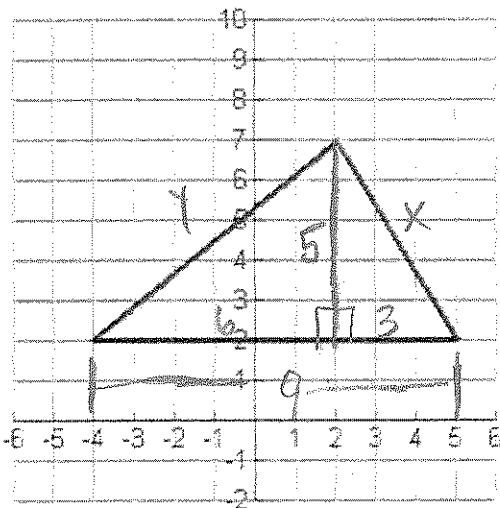
Parallel

not parallel

Angle Relationship Alt. int angles

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I can use a coordinate plane to find information about figures.	4	3	2	1	

15. Find the perimeter and the area. Show all work!



$$5^2 + 3^2 = x^2$$

$$x^2 = 34$$

$$x \approx 5.83$$

$$6^2 + 5^2 = y^2$$

$$y^2 = 61$$

$$y \approx 7.81$$

$$P = 9 + 5.83 + 7.81 = \underline{\underline{22.64u}}$$

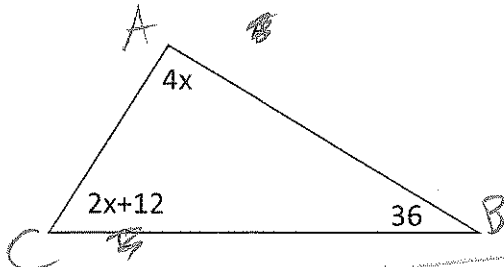
$$A = \frac{bh}{2} = \frac{9 \cdot 5}{2} = \underline{\underline{22.5u^2}}$$

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Need to Study

I can find missing angle measures in a triangle.	4	3	2	1

16. Solve for x and then find the missing angle measurements.



$$4x + 2x + 12 + 36 = 180$$

$$6x + 48 = 180$$

$$x = 22$$

Δ Sum theorem

$m\angle A = 4(22) = 88^\circ$ $m\angle B = 36^\circ$ $m\angle C = 2(22) + 12 = 56^\circ$

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I can solve a system of equations.	4	3	2	1

17. Solve the system of equations below. Show all work!

$$y = 3x + 7$$

$$4x + 5y = -18$$

$$4x + 5(3x + 7) = -18$$

$$4x + 15x + 35 = -18$$

$$19x + 35 = -18$$

$$19x = -53$$

$$x = \frac{-53}{19} \approx -2.789$$

$$y = 3\left(\frac{-53}{19}\right) + 7 = \frac{-26}{19} \approx -1.37$$

$\left(\frac{-53}{19}, \frac{-26}{19}\right)$
or $(-2.79, -1.37)$

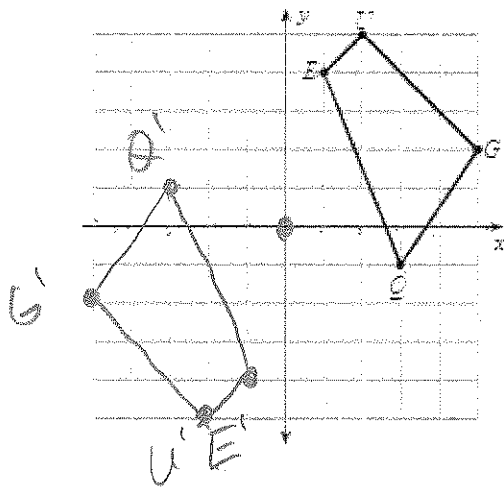
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I can perform transformations on a coordinate grid.	4	3	2	1

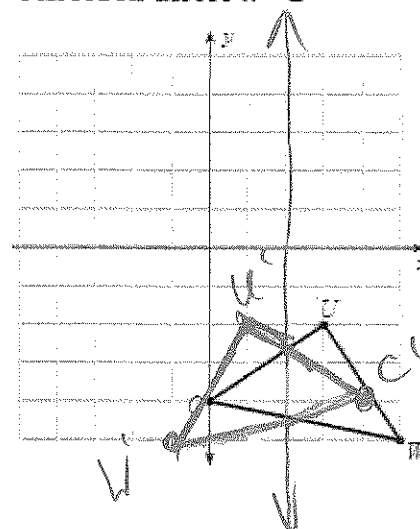
18.

rotation 180° about the origin



19.

reflection across $x = 2$

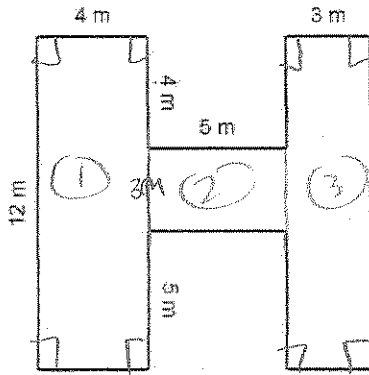


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Need to Study

I can find the area of a composite shape	4	3	2	1
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20.



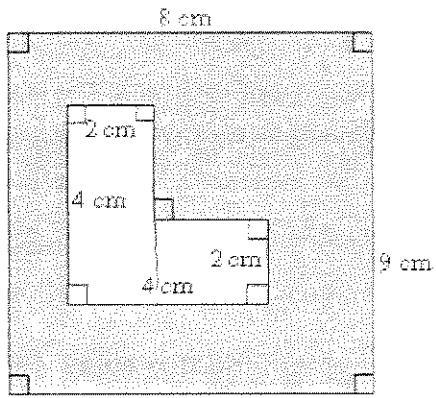
$$A_{\square 1} = 12 \cdot 4 = 48 \text{ m}^2$$

$$A_{\square 2} = 3 \cdot 5 = 15 \text{ m}^2$$

$$A_{\square 3} = 3 \cdot 12 = 36 \text{ m}^2$$

$$A_{\text{Total}} = 99 \text{ m}^2$$

21. Find area of shaded region.



$$A_{\text{Large}} = 8 \cdot 9 = 72 \text{ cm}^2$$

$$A_{\text{L}} = (2 \cdot 4) + (2 \cdot 2) = 12 \text{ cm}^2$$

$$A_{\text{Shaded}} = 60 \text{ cm}^2$$

Confident

Need to Study

I can determine if a triangle is possible given 2 sides	4	3	2	1
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22. Are these three sides possible to form a triangle? How do you know?

10, 29, 18

Example: $19 < 3^{\text{rd}} \text{ side} < 39$
 NOT possible because 3rd side of 18 is too short.

23. What are the possible lengths (minimum/maximum) of the 3rd side of the triangle given below? Picture is not to scale.



$$19 < 3^{\text{rd}} \text{ side} < 27$$

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I can find the lengths of the sides of a right triangle (Pythagorean Theorem)

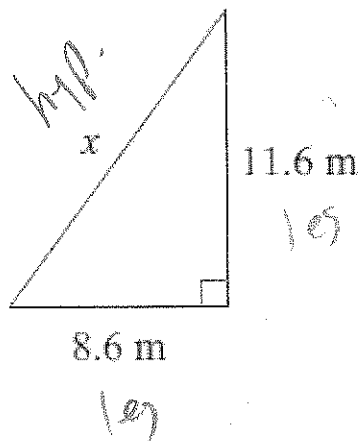
4

3

2

1

24.

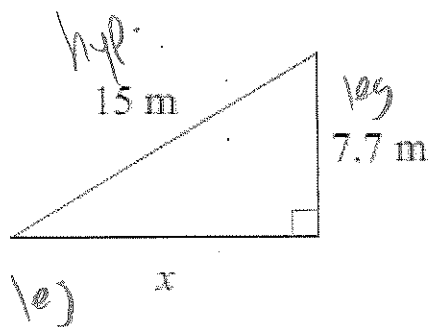


$$8.6^2 + 11.6^2 = x^2$$

$$\sqrt{x^2} = \sqrt{208.52}$$

$$x = 14.44 \text{ m}$$

25.



$$x^2 + 7.7^2 = 15^2$$

$$\sqrt{x^2} = \sqrt{165.71}$$

$$x = 12.87 \text{ m}$$

