

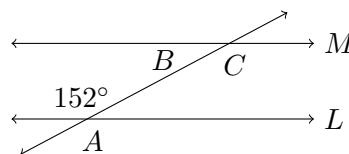
Quiz 2

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Name: _____
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 Score: ___/21

Problem 1: Lines L and M are parallel. Find the measures of $\angle A = \boxed{152^\circ}$,

$\angle B = \boxed{28^\circ}$, and $\angle C = \boxed{152^\circ}$.

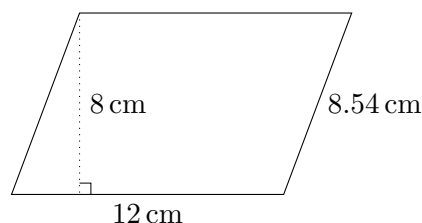


The given angle and $\angle A$ are vertically opposite, so they add to 180° . The given angle and $\angle B$ are interior angles on the same side of the transversal, so they add to 180° . The given angle and $\angle C$ are alternate interior angles, so they are equal.

Score: /3

96 cm^2

Problem 2: Find the area of the parallelogram.

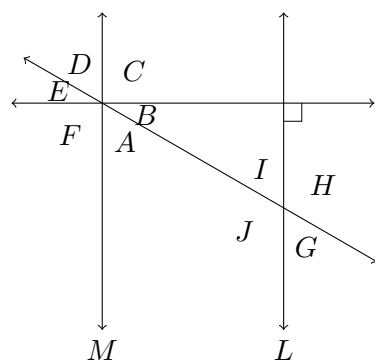


The area of a parallelogram is $A = bh = 12 \text{ cm} \times 8 \text{ cm} = 96 \text{ cm}^2$.

The length of the other side is just smoke and mirrors.

Score: /1

Problem 3: Lines L and M are parallel. Which pairs of the named angles are vertically opposite (vertical angles)?

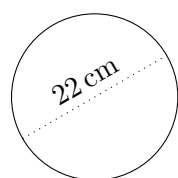


$\angle A$ & $\angle D$; $\angle B$ & $\angle E$; $\angle C$ & $\angle F$;
 $\angle G$ & $\angle I$; and $\angle H$ & $\angle J$;

Score: /5

$121\pi \approx 380.1 \text{ cm}^2$

Problem 4: Find the area of the circle.

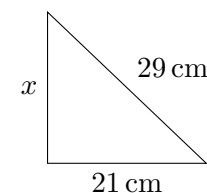


This circle has radius 11 cm since its diameter is 22 cm .
 Therefore the area is $\pi r^2 = \pi(11 \text{ cm})^2 = 121\pi \approx 380.1 \text{ cm}^2$.

Score: /2

Problem 5: Find the length of the third side of the right triangle. If necessary, round to nearest thousandths.

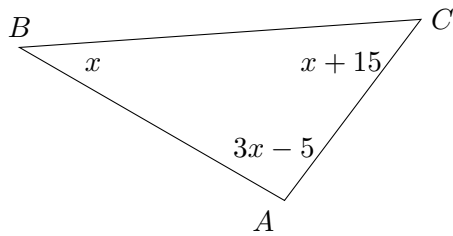
20 cm



If the last side has length x , the Pythagorean Theorem gives that $x^2 + 21^2 = 29^2$, so $x^2 = 29^2 - 21^2 = 400$, so $x = 20$.

Score: /1

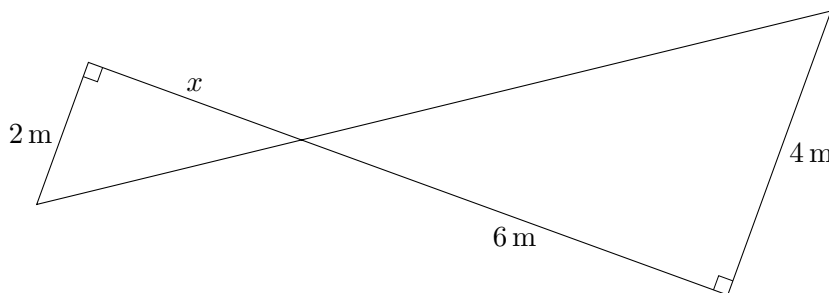
Problem 6: The measures of the angles of the triangle are indicated in terms of x . Find the measure of $\angle A =$.



The angle sum is $x + (x + 15) + (3x - 5) = 5x + 10$, but the angle sum of any triangle is 180° , so $5x + 10 = 180$, so $5x = 170$, so $x = 34$, so $\angle A = 3x - 5 = 3 \times 34 - 5 = 97$.

Score: /3

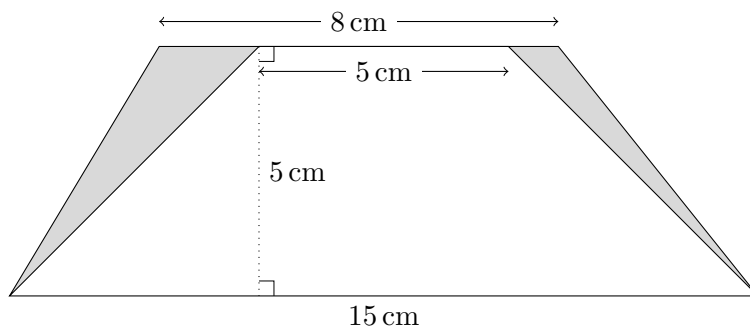
Problem 7: Find $x =$.



The two inner angles are vertically opposite so equal. Since each triangle has a right angle, the third angles have to be equal, too. Hence the triangles are similar and $\frac{x}{2} = \frac{6}{4}$, so $x = 2 \times \frac{6}{4} = 3$.

Score: /1

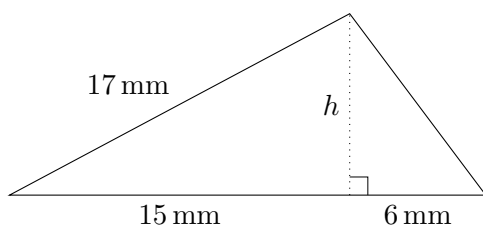
Problem 8: Find the area of the shaded region.



Due to the two right angles, the figure consists of two trapezoids. The area of the outer trapezoid is $\frac{15+8}{2} \times 5 = \frac{115}{2}$ while the area of the inner trapezoid is $\frac{15+5}{2} \times 5 = 50$. Therefore the area of the shaded region is $\frac{115}{2} - 50 = \frac{15}{2} = 7.5 \text{ cm}^2$.

Score: /2

Problem 9: Find the area of the largest triangle shown.



Call the height of the largest triangle h . Since the left triangle is right-angled, $15^2 + h^2 = 17^2$, so $h^2 = 17^2 - 15^2 = 64$, so $h = 8$.

The base of the largest triangle is $15 + 6 = 21$, so the area is $\frac{21 \times 8}{2} = 84 \text{ mm}^2$.

Score: /3