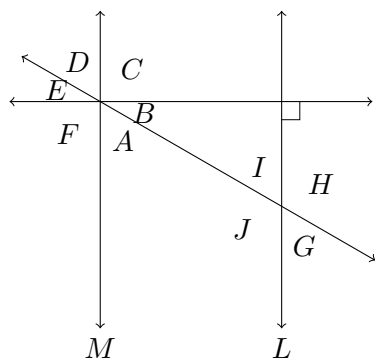


Quiz 2

Show all your work

Name: _____
 Number: _____
 Signature: _____
 Score: ___/21

Problem 1: Lines L and M are parallel. Which pairs of the named angles are corresponding angles with the same measure as angle A ?



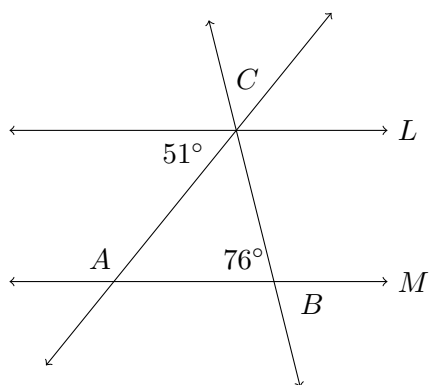
$\angle A$ & $\angle G$; and $\angle D$ & $\angle I$.

Score: ___/2

Problem 2: Lines L and M are parallel. Find the measures of $\angle A =$

129° ,

$\angle B =$ 76° , and $\angle C =$ 53° .

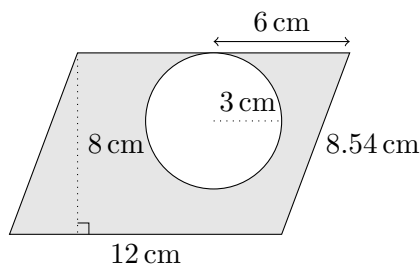


The given angle 51° and $\angle A$ are interior angles on the same side of the transversal, so they add to 180° . The given angle 76° and $\angle B$ are vertically opposite angles, so they have the same measure. The given angle 51° , the corresponding angle to 76° , and $\angle C$ form a straight line, so they add up to 180° .

Score: ___/3

Problem 3: Find the area of the shaded region inside the parallelogram.

67.73 cm^2

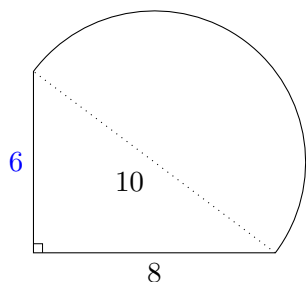


The area of the parallelogram is $A = bh = 12 \text{ cm} \times 8 \text{ cm} = 96 \text{ cm}^2$. The area of the circle is $\pi r^2 = \pi(3 \text{ cm})^2 = 9\pi \text{ cm}^2$. The shaded region therefore has area $96 - 9\pi \approx 67.73 \text{ cm}^2$. The other lengths given are just smoke and mirrors.

Score: ___/3

Problem 4: Find the combined perimeter of a right triangle with a semicircle drawn on its hypotenuse. If necessary, round to nearest thousandths.

29.708 u







If the last side of the triangle has length x , the Pythagorean Theorem gives that $x^2 + 8^2 = 10^2$, so $x^2 = 10^2 - 8^2 = 36$, so $x = 6$.

The semicircle has radius 5, so length $\frac{1}{2} \times 2\pi r = 5\pi$. The perimeter is thus $6 + 8 + 5\pi = 14 + 5\pi \approx 29.71$.

Score: ___/2

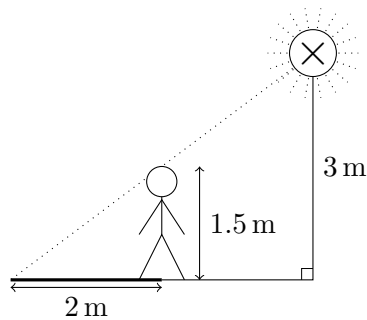
Problem 5: Set up a table for convex polygons' angle sums beginning with a triangle, followed by a quadrilateral, a pentagon, and so on. State the angle sum of an eleven-sided polygon.

Polygon:				...	
Angle sum:	180	360	540	...	1620

The angle sum of an n -gon is $180(n - 2)$.

Score: /2

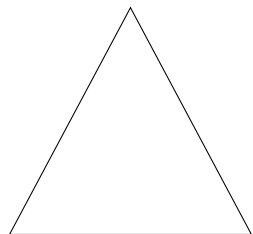
Problem 6: Shown is a 1.5 m tall pedestrian standing near a lamp post of 3 m high. If the pedestrian's shadow is 2 m long, how far away is the pedestrian standing away from the base of the lamp post?



If the distance from the pedestrian to the lamp post is x , then, by similar triangles, $\frac{x+2}{2} = \frac{3}{1.5}$, so $x + 2 = 2 \times \frac{3}{1.5} = 4$, so $x = 2$ m.

Score: /2

Problem 7: Find the area of an isosceles triangle with side lengths of 17, 17, and base 16.



If h is the height, then $h^2 + 8^2 = 17^2$, so $h^2 = 17^2 - 8^2 = 225$, so $h = 15$. The area is hence $\frac{16 \times 15}{2} = 120$ u².

Score: /3

Problem 8: In the three dimensional guide below, draw a three-step staircase where each step is 2 units long by 1 unit wide, and each step rises 1 unit tall. Find the volume and surface area of the staircase.

<p>• • • • • • •</p> <p>• • • • • • •</p> <p>• • • • • • •</p> <p>• • • • • • •</p> <p>• • • • • • •</p> <p>• • • • • • •</p> <p>• • • • • • •</p> <p>• • • • • • •</p> <p>• • • • • • •</p>	<p>You drew the staircase in class. See your lecture notes.</p> <p>$V = 2 \times 1 \times 1 + 2 \times 1 \times 2 + 2 \times 1 \times 3$ $= 12$</p> <p>$SA = 2 \times (3 \times 3 + 2 \times 3 + 2 \times 3)$ $- 2 \times (2 \times 1 + 1 \times 1)$ $= 36$</p> <p>So, $V = 12$ u³ and $SA = 36$ u².</p>
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Score: /4