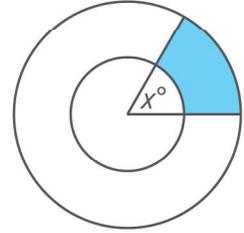




Warm-Up 8

101. _____ coins Brennan has some pennies, nickels and dimes. If he can pay any amount of money from 1 cent to 25 cents in exact change, what is the least total number of coins he could have?

102. _____ degrees The dartboard shown right consists of two circles. The radius of the outer circle is twice the radius of the inner circle. The shaded region represents $\frac{1}{8}$ of the area of the dartboard. What is the measure of the unknown angle x ? Express your answer in degrees.



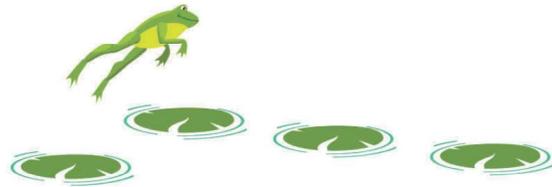
103. _____ arc-seconds There are 60 arcminutes in a degree and 60 arcseconds in 1 arcminute. If a circle rotates completely once every 24 hours, how many arcseconds does the circle rotate every second?

104. _____ triangles How many non-congruent triangles with integer side lengths have perimeter of at most 7?

105. _____ A square has a perimeter that exceeds its area by a positive integer n . What is the sum of the possible distinct values of n ?

106. _____ What integer x satisfies $\frac{x-1}{x-4} = \frac{x-3}{x-5}$?

107. _____ ways A frog is trying to hop from one shore to another, using 18 lily pads arranged in a line across the pond. The frog can hop either 2 lily pads (double hop, which must skip over 1 lily pad) or 3 lily pads (triple hop, which must skip over 2 lily pads); in other words, the frog cannot jump from shore to the first lily pad, nor from the last lily pad to the shore. If the frog makes it across in the fewest hops possible, how many different ways can the frog hop from one shore to the other?



108. _____ cups Rachel uses a pumpkin bread recipe that calls for 4 eggs and $3\frac{1}{2}$ cups of flour. If she uses 7 eggs, how many cups of flour should she use? Express your answer as a mixed number.

★ 109. _____ What is the probability that a randomly chosen positive integer divisor of 32 is a perfect square? Express your answer as a common fraction.

★ 110. _____ dimes Leona has twelve coins totaling 85 cents. If she only has dimes and nickels, how many dimes does she have?