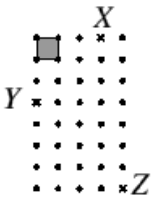
Question

Question ID: 888

18. The shaded square of the lattice shown has area 1. What is the area of the circle through the points X, Y and Z?



A $\frac{9\pi}{2}$ B 8π C $\frac{25\pi}{2}$ D 25π E 50π

Answer

18. **C** Since $XY^2 = 18$, $YZ^2 = 32$ and $XZ^2 = 50$, we have $XZ^2 = XY^2 + YZ^2$. Hence by the converse of Pythagoras' Theorem, $\angle XYZ = 90°$. Since the angle in a semi-circle is 90° the segment XZ is the diameter of the specified circle. Hence the radius is $\frac{1}{2}\sqrt{50}$ and the area of the circle is $\frac{50\pi}{4} = \frac{25\pi}{2}$.