Let $X$ and $Y$ denote the two bids. Then the graph below illustrates the region over which $X$ and $Y$ differ by less than 20:

Based on the graph and the uniform distribution:

$$\Pr[|X - Y| < 20] = \frac{\text{Shaded Region Area}}{(2200 - 2000)^2} = \frac{200^2 - 2 \cdot \frac{1}{2} (180)^2}{200^2}$$

$$= 1 - \frac{180^2}{200^2} = 1 - \left(\frac{0.9}{1}\right)^2 = 0.19$$

More formally (still using symmetry)

$$\Pr[|X - Y| < 20] = 1 - \Pr[|X - Y| \geq 20] = 1 - 2 \Pr[ X - Y \geq 20]$$

$$= 1 - 2 \int_{2000}^{2200} \frac{1}{200^2} \, dy \, dx = 1 - 2 \int_{2000}^{2200} \frac{1}{200^2} \, y \, |y - 20 | \, dx$$

$$= 1 - \frac{2}{200} \int_{2000}^{2200} (x - 20 - 2000) \, dx = 1 - \frac{1}{200} \left( x - 20 \right)^2 \Bigg|_{2000}^{2200}$$

$$= 1 - \left( \frac{180}{200} \right)^2 = 0.19$$