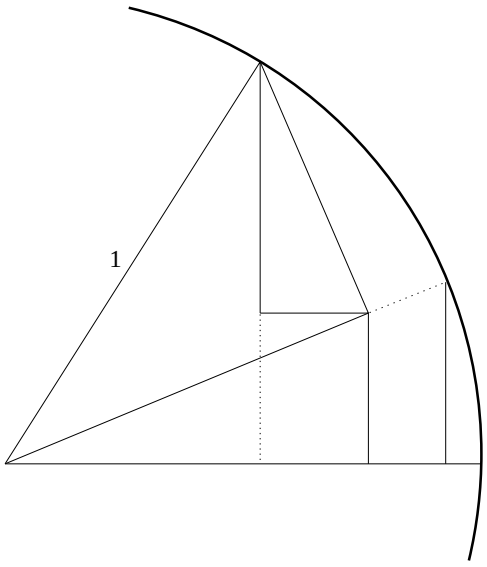
Math 181 Quiz 2 Version A

1. Find all values of x which satisfy

(i) $|x - 7| < 2$.

(ii) $\dfrac{1}{x+5} \geq \dfrac{1}{2x+3}$.

2. Suppose $a > 0$, $b > 0$ and $a + b < \pi/2$. Prove $\sin(a + b) = \sin a \cos b + \cos a \sin b$.



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3. Simplify the the following sums.

(i) $\sum_{k=3}^{n} k = 3 + 4 + 5 + \cdots + n.$

(ii) $\sum_{k=5}^{25} x^k = x^5 + x^6 + x^7 + \cdots + x^{25}$ under the assumption $x \neq 1$.

4. Use the ϵ-δ definition of contintity to show that $f(x) = 3x$ is continuous at $x_0 = 5$.