

The Weekly Rigor

No. 111

“A mathematician is a machine for turning coffee into theorems.”

August 6, 2016

SAT Math Test Problem Children: Trigonometry (Part 4)

7.



Note: Figures not drawn to scale.

The angles shown above are acute and $\sin(a^\circ) = \cos(b^\circ)$. If $a = 2k - 20$ and $b = 8k - 15$, what is the value of k ?

- A) 3.5
- B) 4.5
- C) 12.5
- D) 21.5

8.



Note: Figures not drawn to scale.

The angles shown above are acute and $\sin(a^\circ) = \cos(b^\circ)$. If $a = 6k - 18$ and $b = 4k - 19$, what is the value of k ?

- A) 12.7
- B) 21.7
- C) 3.5
- D) 4.5

9.



Note: Figures not drawn to scale.

The angles shown above are acute and $\sin(a^\circ) = \cos(b^\circ)$. If $a = 4k - 16$ and $b = 6k - 17$, what is the value of k ?

- A) 5.5
- B) 4.5
- C) 12.3
- D) 21.3

10.



Note: Figures not drawn to scale.

The angles shown above are acute and $\sin(a^\circ) = \cos(b^\circ)$. If $a = 5k - 22$ and $b = 5k - 12$, what is the value of k ?

- A) 3.5
- B) 4.5
- C) 12.4
- D) 21.4

“Only he who never plays, never loses.”