

The Weekly Rigor

No. 144

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

March 25, 2017

SAT Math Test Problem Children: Randomized Problem Set 1

(Part 4)

24.

$$2x + b = 4x - 6$$

$$2y + c = 4y - 6$$

In the equations above, b and c are constants. If b is c minus $\frac{1}{2}$, which of the following is true?

A) x is y plus $\frac{1}{4}$.

B) x is y minus $\frac{1}{2}$.

C) x is y minus 1.

D) x is y minus $\frac{1}{4}$.

25. Which of the following complex numbers is equivalent to $\frac{1-3i}{6+2i}$? (Note: $i = \sqrt{-1}$)

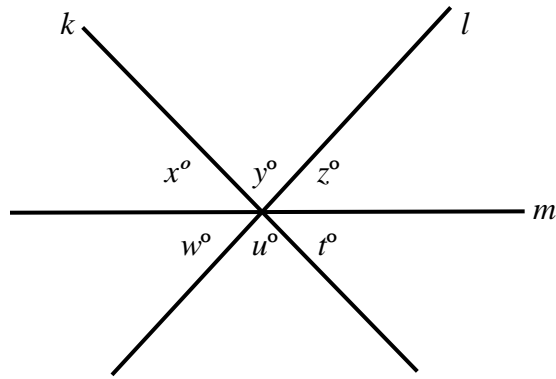
A) $\frac{i}{2}$

B) $-\frac{i}{2}$

C) $\frac{1}{6} - \frac{3i}{2}$

D) $\frac{1}{6} + \frac{3i}{2}$

26.



Note: Figure not drawn to scale.

In the figure above, lines k , l , and m intersect at a point. If $x + y = u + w$, which of the following must be true?

- I. $w = t$
- II. $y = u$
- III. $w = u$

- A) I and II only
- B) I and III only
- C) II and III only
- D) I, II, and III

27. If $\frac{x-1}{3} = k$ and $k = 3$, what is the value of x ?

“Only he who never plays, never loses.”