The Weekly Rigor

No. 123 "A mathematician is a machine for turning coffee into theorems." October 29, 2016

SAT Math Test Problem Children: Solving Quadratic Equations

(Part 5)

15.

$$x^2 - \frac{k}{2}x = 3p$$

In the quadratic equation above, *k* and *p* are constants. What are the solutions for *x* ?

A) $x = \frac{k}{2} \pm \frac{\sqrt{k^2+48p}}{2}$

B) $x = \frac{k}{2} \pm \frac{\sqrt{k^2+3p}}{2}$

C) $x = \frac{k}{3} \pm \frac{\sqrt{k^2+2p}}{3}$

D) $x = \frac{k}{4} \pm \frac{\sqrt{k^2+48p}}{4}$

16.

$$(x+4)^2 - 9 = 0$$

What is a value of *x* that satisfies the equation above?

17.

$$(x+2)^2 - 9 = 0$$

What is a value of *x* that satisfies the equation above?

18.

$$(x+2)^2 - 25 = 0$$

What is a value of *x* that satisfies the equation above?

19. What are the solutions to the equation

$$2x^2 - 72 = 0 \text{ ?}$$

20. What are the solutions to the equation

$$2x^2 - 32 = 0 \text{ ?}$$

21. What are the solutions to the equation

$$3x^2 - 75 = 0 \text{ ?}$$

ANSWERS

1. $-2 \pm \sqrt{3}$	8. 8	15. D
2. $-2 \pm \sqrt{2}$	9. 9	16. -7 and -1
3. $-2 \pm \sqrt{2}$	10. 4	17. -5 and 1
4. $\frac{1}{5}$	11. $\frac{13}{5}$	18. -7 and 3
5. $\frac{1}{3}$	12. $\frac{14}{3}$	19. -6 and 6
6. $\frac{1}{3}$ or 1	13. D	20. -4 and 4
7. 4	14. C	21. -5 and 5