

SUBSTITUTION - VERSION B

ORDER OF OPERATIONS	
1. PARENTHESES OR BRACKETS () OR []	↓
2. EXPONENTS $3^2 = 3 \times 3$	↓
3. MULTIPLICATION AND DIVISION $\times \div$	↓
<i>LEFT TO RIGHT</i>	
4. ADDITION AND SUBTRACTION $+$ $-$	

THE MATH CRUSH

ANSWERS - VERSION B

USE THE ORDER OF OPERATIONS TO FIND THE VALUE OF $(5i + 9) - i^2$ IF $i = 4$.

$$\begin{aligned} (5i + 9) - i^2 &= (5 \times 4 + 9) - (4 \times 4) \\ &= (20 + 9) - (16) \\ &= 29 - 16 \\ &= 13 \end{aligned}$$

FIND THE VALUE OF EACH EXPRESSION IF $x = 6$.

1. $x \cdot (20 - 3x)$

12

2. $x - x \div 2$

3

3. $(14 - x) + x^2$

44

4. $\frac{x}{3} + (7 \cdot x)$

44

5. $\frac{x + 14}{10}$

2

6. $(4x + 13) - 17$

20

FIND THE VALUE OF EACH EXPRESSION IF $a = 5$, and $b = 10$.

7. $b \div a \cdot 2$

4

8. $\frac{b}{b} - \frac{a}{b}$

$\frac{1}{2}$

9. $4a - (2b - 12)$

12

10. $b - a + a$

10

11. $a^2 + (15 - a)$

35

12. $\frac{b + 14}{a + 3}$

3

FIND THE VALUE OF EACH EXPRESSION IF $n = 24$, $s = 12$, and $u = 3$.

13. $(n - u) - (s + u)$

6

14. $s + n \div 6 - u$

13

15. $n - u^2 + 7$

22

16. $\frac{3nsu}{6nsu} + \frac{4nsu}{8nsu}$

1

17. $\frac{su}{4} + 2n$

57

18. $(8u - n) + 4s$

48

FIND THE VALUE OF EACH EXPRESSION IF $k = 8$, $r = 2$, and $v = 6$.

19. $k \cdot r \div k \cdot v$

12

20. $(v - r)^2 \div (k - v)^2$

4

21. $\frac{2kv}{24rv} + \frac{3rv}{9v}$

1

22. $(r^6 - v^2) - r^2 + v$

30

23. $\frac{k}{v} - \frac{r}{k} + \frac{v}{r}$

$4\frac{1}{12}$

24. $\frac{kv}{r} - 3v + 3r$

12