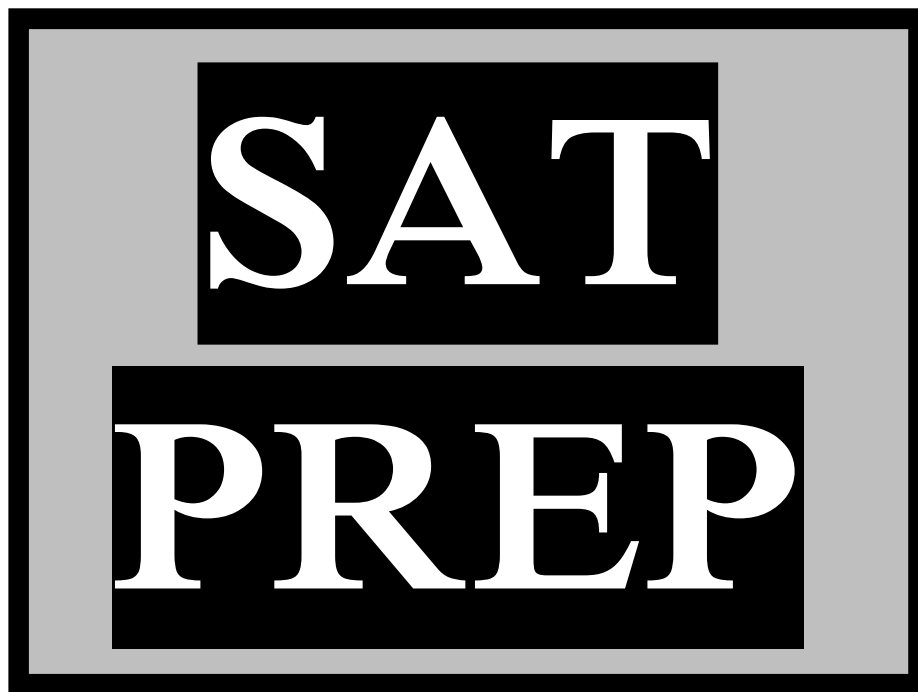


**JD's** REGENTS PREPARATION, LLC.

-Presents-



**REVIEW MANUAL**  
WITH  
**264 TOTAL REVIEW**  
**QUESTIONS**

148 TOPICALLY ORGANIZED QUESTIONS  
AND  
116 QUESTIONS CONTAINED IN  
TWO PRACTICE EXAMS



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## Equivalent Expressions

1. Which of the following expressions is equal to 0 for some value of  $k$  ?

- (A)  $|k + 1| + 1$
- (B)  $|k - 1| + 1$
- (C)  $|k + 1| - 1$
- (D)  $|k - 1| + 1$

EE 01



2.  $2(7x + 2)(2x + 2)$   
Which of the following is equivalent to the expression above?

- (A)  $72x$
- (B)  $28x^2 + 8$
- (C)  $28x^2 + 36x + 8$
- (D)  $18x^2 + 8$

EE 02



3. Which of the following is equivalent to the sum of the expressions  $b^2 + 3$  and  $b - 3$  ?

- (A)  $2b^2$
- (B)  $b^3$
- (C)  $b^2 + b$
- (D)  $b^3 - 3$

EE 03



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No Calculator – Equivalent Expressions

4. Which of the following is equivalent to  $\left(k - \left(\frac{j}{3}\right)\right)^2$ ?

EE 04



- (A)  $k^2 - \frac{j^2}{3}$   
(B)  $k^2 - \frac{j^2}{9}$   
(C)  $k^2 - \frac{kj}{3} + \frac{j^2}{3}$   
(D)  $k^2 - \frac{2k}{3} + \frac{j^2}{9}$

5.  $B = \frac{G}{N+G}$

EE 05



A playing card factory uses the formula above to calculate manufacturing efficiency,  $B$ , based on the number of cards made,  $G$ , and the amount of wasted card material,  $N$ . Which of the following expresses the number of cards made in terms of the other variables?

- (A)  $G = \frac{BN}{1-B}$   
(B)  $G = \frac{BN}{B-1}$   
(C)  $G = \frac{N}{1-B}$   
(D)  $G = \frac{N}{B-1}$

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No Calculator – Equivalent Expressions

6. The expression  $\frac{6x+5}{x+3}$  is equivalent to which of the following?

- (A)  $\frac{6+5}{3}$   
(B)  $6 + \frac{5}{3}$   
(C)  $6 - \frac{5}{x+3}$   
(D)  $6 - \frac{13}{x+3}$

EE 06



7. If  $\frac{a+7}{a-7} = 12$ , what is the value of  $a$ ?

EE 07



8. The line  $y = mx - 3$  where  $m$  is a constant, is graphed in the  $xy$ -plane. If the line contains the point  $(i, j)$ , where  $i \neq 0$  and  $j \neq 0$ , what is the slope of the line in terms of  $i$  and  $j$ ?

EE 08



- (A)  $\frac{j+3}{i}$   
(B)  $\frac{i+3}{j}$   
(C)  $\frac{3-j}{i}$   
(D)  $\frac{3-i}{i}$

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No Calculator – Equivalent Expressions

9. If  $\frac{x-y}{y} = \frac{5}{2}$ , which of the following must also be true?

EE 09



- (A)  $\frac{x}{y} = -\frac{3}{2}$   
(B)  $\frac{x}{y} = \frac{7}{2}$   
(C)  $\frac{x+y}{y} = \frac{7}{2}$   
(D)  $\frac{x-2y}{y} = -\frac{1}{2}$

10. Which of the following is equivalent to  $\frac{3x^2+8x}{3x+5}$ ?

EE 10



- (A)  $x$   
(B)  $x + 3$   
(C)  $x - \frac{5}{3x+5}$   
(D)  $x + 1 - \frac{5}{3x+5}$

11. A contractor uses the formula  $t = 15wl$  to estimate the number of tiles,  $t$ , needed to tile a room that is  $w$  feet wide and  $l$  meters long. Which of the following expresses  $w$  in terms of  $t$  and  $l$ ?

EE 11



- (A)  $w = \frac{15}{tl}$   
(B)  $w = \frac{l}{15t}$   
(C)  $w = \frac{t}{15l}$   
(D)  $w = \frac{t}{15+l}$



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No Calculator – Equivalent Expressions

12. At a chili convention, Rodrigo ate  $p$  chili samples each hour for 3 hours, and Kary ate  $q$  chili samples each hour for 4 hours. Which of the following represents the total number of chili samples eaten by Rodrigo and Kary at the chili convention?

EE 12



- (A)  $7pq$
- (B)  $12pq$
- (C)  $3p + 4q$
- (D)  $4p + 3q$

13.  $16x^4 + 24x^2y^2 + 9y^4$   
Which of the following is equivalent to the expression shown above?

EE 13



- (A)  $(4x + 3)^4$
- (B)  $(4x^2 + 3y^2)^2$
- (C)  $(16x^2 + 9y^2)^2$
- (D)  $(16x + 9y)^4$

14. An investment compounds annually at a rate of 7%. If the initial investment was \$137, which of the following functions  $f$  models the value of the investment after  $t$  years?

EE 14



- (A)  $f(t) = 137(1.07)^t$
- (B)  $f(t) = 137(0.93)^t$
- (C)  $f(t) = 1.07(137)^t$
- (D)  $f(t) = 0.93(137)^t$

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No Calculator – Equivalent Expressions

15. Which of the following is equal to  $k^{\frac{5}{7}}$ ,  
for all values of  $k$ ?

EE 15



- (A)  $\sqrt{k^{\frac{1}{7}}}$
- (B)  $\sqrt{k^7}$
- (C)  $\sqrt[7]{k^{\frac{1}{5}}}$
- (D)  $\sqrt[7]{k^5}$

16. A phone store got three times more customers on the launch day of a new phone than the following day. If the phone store had 300 customers on launch day, and  $k$  customers the following day, which of the following expressions is true?

EE 16



- (A)  $300k = 3$
- (B)  $3k = 300$
- (C)  $\frac{k}{3} = 300$
- (D)  $k + 300 = 3$