

Radical and Rational Equations Problems

1. $\sqrt[3]{64x^6y^5}$ (No Calc)
Which of the following is equivalent to the expression above?
A) $8x^2y^2$
B) $4x^2y^3\sqrt[3]{y^2}$
C) $8x^2y^3\sqrt[3]{y^2}$
D) $4x^2y^2$
2. $3\sqrt[3]{9} \times 3\sqrt[3]{3}$ (No Calc)
What is the value of the expression above?
A) $3\sqrt[3]{12}$
B) $27\sqrt[3]{3}$
C) 27
D) 81
3. $\left(\frac{27}{b^8}\right)^{-\frac{1}{3}}$ (No Calc)
Which of the following is equivalent of the expression above?
A) $\frac{3}{b^{2\sqrt[3]{2}}}$
B) $\frac{b^{2\sqrt[3]{2}}}{3}$
C) $\frac{3}{b^2}$
D) $\frac{b^2}{3}$
4. $n+3=\sqrt{2a-5}$ (No Calc)
For what value of the constant a does the above equation have $n = 4$ as the only solution?
A) $12-6\sqrt{3}$
B) 27
C) 12
D) $27-6\sqrt{3}$
5. $x-6=\sqrt{4x-28}$ (No Calc)
What is the solution set for the above equation?
A) $\{8\}$
B) $\left\{\frac{22}{3}\right\}$
C) $\left\{-8, \frac{22}{3}\right\}$
D) $\left\{8, \frac{22}{3}\right\}$
6. $2x^{\frac{1}{2}}+3x=0$ (No Calc)
What is the least value of x that is a solution to the above equation?
A) $-\frac{2}{3}$
B) $\frac{4}{9}$
C) 0
D) 2
7. $x=\sqrt{11+5x}-3$ (No Calc)
What are all the possible values of x that satisfy the equation above?
A) 1
B) -2
C) -2 and 1
D) 2 and -1
8. $x-6\sqrt{x}+8=0$ (No Calc)
What are the possible values of x that solve the equation above?
A) 4 and 16
B) -8 and 8
C) -8 and 16
D) 4 and 25
9. $\frac{3x-5}{4x-5}=\frac{5}{6}$ (No Calc)
What is the solution to the equation above?
A) 2.5
B) 4
C) -2.5
D) -4

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10. $18y - 6\sqrt{y} = 0$ (No Calc)

What is the least value of y that is a solution to the above equation?

- A) 0
- B) $\frac{1}{3}$
- C) $\frac{1}{9}$
- D) 3