Trig 1-3 Simplifying Radicals

Name: _____ Time› Start: _____ Finish: _____ Total Time = _____

Recall: $i = \sqrt{-1}$ $i^2 = -1$

Simplify each radical:

1. $\sqrt{98}$

2. $\sqrt{-75}$

3. $\sqrt{-4}$

4. $\sqrt{72}$

5. $\sqrt{-162}$

6. $\sqrt{a^4b^6}$

7. $\sqrt{a^{11}}$

8. $\sqrt{a^5b^{21}}$

9. $\sqrt{a^6b^7c^9}$

10. $\sqrt{20a^{70}}$

11. $\sqrt{-8a^3}$

12. $\sqrt{-a^4b^9}$

13. $\sqrt[3]{8a^4b^6}$

14. $\sqrt[4]{a^{12}b^5}$

15. $\sqrt[3]{x^{14}y^{10}}$

SAT Questions

_____ 16. If $(7^a)(7^b) = \frac{7^c}{7^d}$, what is d in terms of a, b, and c?

A. $\frac{c}{ab}$ B. c – a – b C. a + b – c D. c – ab E. $\frac{c}{a+b}$

For 17-18, the following rule is to be used.
For any positive integer n, €(n) represents the number of positive divisors of n.
(For example €(10) = 4 since the positive divisors of 10 are 1, 2, 5, and 10.)

_____ 17. Which of the following is (are) true?

I. €(5) = €(7)

II. €(5) ● €(7) = €(35)

III. €(5) + €(7) = €(12)

A. I only B. II only C. I and II only D. I and III only E. I, II, and III

_____ 18. What is the value of €(€(€(12)))?

_____ 19. If $a = b^3$ and b is positive, then by what factor does a increase if b is tripled?
A. 3 B. 8 C. 9 D. 27 E. 81

_____ 20. If $20^w = 5^3 \times 4^3$, what is the value of w?