Test: Unit7
Radicals

Practice

There are 20 questions in this quiz, each of equal value.
Standard time for the quiz is 40 minutes .

Four operations calculator is allowed.

'Calculator' replacement:

$2^0 = 1$; $2^1 = 2$; $2^2 = 4$; $2^3 = 8$; $2^4 = 16$; $2^5 = 32$; $2^6 = 64$;
$2^7 = 128$; $2^8 = 256$; $2^9 = 512$; $2^{10} = 1024$
$3^0 = 1$; $3^1 = 3$; $3^2 = 9$; $3^3 = 27$; $3^4 = 81$; $3^5 = 243$
$4^0 = 1$; $4^1 = 4$; $4^2 = 16$; $4^3 = 64$; $4^4 = 256$; $4^5 = 1024$
$5^0 = 1$; $5^1 = 5$; $5^2 = 25$; $5^3 = 125$; $5^4 = 625$
$6^0 = 1$; $6^1 = 6$; $6^2 = 36$; $6^3 = 216$
$7^0 = 1$; $7^1 = 7$; $7^2 = 49$; $7^3 = 343$
$8^0 = 1$; $8^1 = 8$; $8^2 = 64$; $8^3 = 512$
$9^0 = 1$; $9^1 = 9$; $9^2 = 81$; $9^3 = 729$

Simplify:

1. $\sqrt{128r^2x^3n^8}$	2. $\sqrt[4]{128x^7y^8w^4}$
3. $\sqrt{12y} \cdot 2\sqrt{24y}$	4. $(-7+\sqrt{3x})\cdot(4+\sqrt{3x})$
5. $(\sqrt{3}+\sqrt{5x})(\sqrt{3}-5\sqrt{5x})$	6. $(7+\sqrt{6})(1+\sqrt{6})$
7. $-\sqrt[3]{320}-4\sqrt[3]{5}+2\sqrt[3]{135}+2\sqrt[3]{16}$	8. $-2\sqrt{45}-3\sqrt{20}-2\sqrt{6}$
9. $\sqrt[6]{(-2)^6}$	10. $\sqrt[5]{(-7)^5}$

Simplify:

11. $\sqrt[8]{64}$	12. $\frac{\sqrt{15}}{\sqrt{12}}$
13. Rationalize denominator $\frac{\sqrt{3}}{-1-\sqrt{5}}$	14. Rationalize denominator $\frac{2-\sqrt{3}}{-2-\sqrt{5}}$
15. $(9r^4)^{-0.5}$	16. $36^{\frac{3}{2}}$
17. $(64n^{12})^{-\frac{1}{6}}$	18. $\sqrt[7]{y^5 \cdot 128 \cdot x^{14} \cdot \sqrt[4]{y^8}}$

19. Solve: $\sqrt{8k} = k$

(Show your work!)

Check:

20. Solve: $\sqrt[3]{16k} = k$

(Show your work!)

Check:

21. Solve: $\sqrt{3x - 6} + 10 = 4$

(Show your work!)

Check:

Simplify:

22. $\left(\sqrt{-4}\right)\left(\sqrt{-3}\right)$	23. $\sqrt[3]{-16}$
24. $(x+2i)(5-i\cdot x)$	25. $5(3+2i)-4i$
26. $\sqrt{-3}\cdot\left(i\cdot 4\ -\ \sqrt{-3}\right)$	27. $\dfrac{-3+10i}{-6i}$
28. $\dfrac{i}{-2-8i}$	29. Solve using the quadratic equation: $-2x^2+3x+9=0$

=== End of test