DAY 1 - Simplifying Radicals

Practice:

a. $\sqrt{16}$ b. $\sqrt{48}$ c. $\sqrt{28}$ d. $\sqrt{14}$

e. $3\sqrt{96}$ f. $4\sqrt{20}$ g. $6\sqrt{120}$ h. $2\sqrt{36}$

Simplifying Radical Expressions with Square Roots

a. $\sqrt{9x^6}$ b. $\sqrt{4x^4}$ c. $\sqrt{32z^7}$

d. $\sqrt{45y^2}$ e. $\sqrt{108x^5y^9}$ f. $3\sqrt{12x^2}$

g. $3\sqrt{18a^4}$ h. $-2\sqrt{36f^3g^4}$ i. $5\sqrt{20x^{16}y^{10}}$

Multiplying Radicals

How to Multiply Radicals

1)Multiply the coefficients and the radicands separately (**do not cross the streams!!!**).
2)Simplify the radicand at the end.

For example, consider $3\sqrt{2} \bullet 4\sqrt{5}$.

Multiply "3 and 4", and multiply "2 and 5" to get $\boxed{12\sqrt{10}}$.

The radicand, 10, cannot be simplified any more, so $12\sqrt{10}$ is the final answer.

Simplify.

1. $9\sqrt{2} \bullet 5\sqrt{6}$

12. $(4\sqrt{3})(-8\sqrt{15})(2\sqrt{2})$

Directions: Multiply the following radicals. Make sure they are in simplest form.

a. $\sqrt{5} \bullet \sqrt{10}$

b. $\sqrt{8} \bullet \sqrt{32}$

c. $4\sqrt{6} \bullet 4\sqrt{6}$

d. $-\sqrt{6} \bullet 3\sqrt{8}$

e. $6\sqrt{15} \bullet \sqrt{10}$

f. $\sqrt{a^3 b} \bullet \sqrt{a \bullet b}$

g. $\sqrt{3x} \bullet \sqrt{15x}$

h. $5\sqrt{2y^3} \bullet \sqrt{32y}$

i. $-3\sqrt{8x^4 z} \bullet -7\sqrt{y^3 z^5}$

DAY 1 Practice – Simplifying and Multiplying Radicals

Simplify. Assume all variables represent positive numbers.

1. $\sqrt{64}$
2. $\sqrt{4}$
3. $\sqrt{169}$
4. $\sqrt{256}$
5. $\sqrt{24}$
6. $\sqrt{48}$
7. $\sqrt{32}$
8. $5\sqrt{98}$
9. $-3\sqrt{3}$
10. $10\sqrt{200}$
11. $\sqrt{y^2}$
12. $\sqrt{a^2b}$
13. $\sqrt{c^4d^5}$
14. $\sqrt{k^{100}}$
15. $2\sqrt{4x^2y^7z^9}$
16. $r^2\sqrt{40r^4s^{12}}$

Multiplying Radicals

17. $\sqrt{3} \bullet \sqrt{6}$
18. $2\sqrt{12} \bullet \sqrt{2}$
19. $100\sqrt{5} \bullet -2\sqrt{6}$
20. $8 \bullet 3\sqrt{2}$
21. $(3\sqrt{6})(9\sqrt{2})(4\sqrt{10})$
22. $-\sqrt{11} \bullet -4\sqrt{121}$
23. $x\sqrt{3x} \bullet x\sqrt{5x}$
24. $\sqrt{x} \bullet \sqrt{y} \bullet \sqrt{z^2}$
25. $2\sqrt{3} \bullet 4\sqrt{5} \bullet 6\sqrt{7}$