Simplifying Square Roots

Name_____

Date_____ Class _____

1) Which is correct? $\sqrt{7 \cdot 4} = 7\sqrt{4}$ or $2\sqrt{7}$

2) Simplify the following. (Do that by inspecting each radicand for a square factor: $4, 9, 16, 25$, and so on.)

a) $\sqrt{28} =$

b) $\sqrt{50} =$

c) $\sqrt{45} =$

d) $\sqrt{98} =$

e) $\sqrt{48} =$

f) $\sqrt{300} =$

g) $\sqrt{150} =$

h) $\sqrt{80} =$

i) $\sqrt{125} =$

Note: the square root of 9 is 3 and the square root of 2 is irrational and can not be simplified any further.

3) Reduce to lowest terms.

a) $\dfrac{\sqrt{20}}{2} =$

b) $\dfrac{\sqrt{72}}{3} =$

c) $\dfrac{\sqrt{22}}{2} =$

d) $\dfrac{\sqrt{300}}{5} =$

e) $\dfrac{\sqrt{98}}{14} =$

f) $\dfrac{\sqrt{28}}{14} =$

4) Simplify each radical, then add the similar radicals.

a) $\sqrt{18} + \sqrt{8} =$

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b) $4\sqrt{75} - 2\sqrt{147} + \sqrt{3} =$

c) $3\sqrt{28} + \sqrt{88} - 2\sqrt{112} =$

d) $3 + \sqrt{24} + \sqrt{54} =$

e) $1 - \sqrt{128} + \sqrt{18} =$

5) Simplify the following. (Hint: Use the Distributive Property to divide each term in the numerator by the denominator (or a common factor of the denominator).)

a) $\dfrac{4 - \sqrt{8}}{2} =$

b) $\dfrac{10 + \sqrt{50}}{5} =$

c) $\dfrac{6 + \sqrt{24}}{6} =$

d) $\dfrac{\sqrt{18} - \sqrt{8} + 6}{6} =$

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