

Test Review

① Which are irrational?

(a) $\sqrt{36}$

Q

(b) $\sqrt[3]{12}$

Q

(c) $\sqrt[5]{32}$

Q

② Put in order in order... → smallest

① $\sqrt[4]{100}$
= 3.16

③ $38^{\frac{4}{7}}$
= 7.99

↓
largest

② $\left(\frac{3}{4}\right)^{-6}$
= 5.62

④ $\left(\sqrt[3]{27}\right)^4$
= 81

0.75^{-6}
 $\left(\frac{3}{4}\right)^{-6}$

② Simplify the following

$$(a) \sqrt{20}$$

$$\sqrt{4} \cdot \sqrt{5}$$

$$= 2\sqrt{5}$$

$$(b) 3\sqrt{75}$$

$$3(\sqrt{25} \cdot \sqrt{3})$$

$$3(5\sqrt{3})$$

$$= 15\sqrt{3}$$

$$(c) 9\sqrt{72}$$

$$9(\sqrt{36} \times \sqrt{2})$$

$$9(6\sqrt{2})$$

$$54\sqrt{2}$$

$$(d) \sqrt[3]{24}$$

$$\sqrt[3]{8} \times \sqrt[3]{3}$$

$$2\sqrt[3]{3}$$

$$(e) \sqrt[4]{16}$$

$$= 2$$

$$(f) 2\sqrt[5]{96}$$

$$2(\sqrt[5]{2^2} \cdot \sqrt[5]{3})$$

$$2(2\sqrt[5]{3})$$

$$4\sqrt[5]{3}$$

Switch to entire Radical

$$(a) 3\sqrt{7}$$

$$\sqrt{3^2 \cdot 7}$$

$$\sqrt{63}$$

$$(b) -5\sqrt{6}$$

$$-\sqrt{5^2 \cdot 6}$$

$$-\sqrt{150}$$

$$(c) 2\sqrt[4]{3}$$

$$\sqrt[4]{2^4 \cdot 3}$$

$$\sqrt[4]{48}$$

Exponents

$$\textcircled{1} \quad \sqrt[3]{x^4} = x^{\frac{4}{3}}$$

$$\left(\sqrt[3]{x}\right)^4 = x^{\frac{4}{3}}$$

$$\textcircled{2} \quad 8^{\frac{4}{3}} = \left(\sqrt[3]{8}\right)^4$$

$$= 2^4$$

$$= 16$$

$$\textcircled{3}$$

$$32^{-\frac{2}{5}} = \frac{1}{32^{\frac{2}{5}}}$$

$$= \frac{1}{\left(\sqrt[5]{32}\right)^2}$$

$$= \frac{1}{4}$$

$$\textcircled{4} \quad 100^{\frac{3}{2}} = \left(\sqrt{100}\right)^3$$

$$= 10^3$$

$$= \underline{1000}$$

$$9^{150}$$

$$(3^2)^{150}$$

$$(3^{300})$$

$$27^{60}$$

$$(3^3)^{60}$$

$$3^{180}$$

3.7789 0.0.0.0 0.0.0.0 0.0.0.0 0.

$$3.7789 \times 10^{16}$$