



THINK EDUCATION
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MATH REVIEW

FRACTIONS

$1/2 = .5$

$3/8 = .375$

$1/3 = .33$

$1/4 = .25$

$1/5 = .2$

$1/6 = .167$

$1/7 = .14$

$1/8 = .125$

$1/9 = .111$

$4/9 = 1/9 \times 4 = .44$

EXPONENTS

$2^3 = 8$

$3^3 = 27$

$4^3 = 64$

$5^3 = 125$

$10^3 = 1000$

$2^{10} = 1024$

$2^4 \times 2^3 = 2^7$

$2^3 \times 3^2 \neq 2^7$ must be like bases

$(2^3)^2 = 2^6 \rightarrow$ multiply when raising exponents

$6^4 = (3 \times 2)^4 = 3^4 \times 2^4$

$2^5 / 2^3 = 2^2 \rightarrow$ subtract exponents when dividing

SQUARE ROOTS AND LOGS

$\sqrt{2} = 1.4$

$\sqrt{3} = 1.7$

$\sqrt{10} = 3.2$

$\log 10 = 1$

$\log 100 = 2$

$\log 1000 = 3$

SCIENTIFIC COMPUTATION

$.1 \times 10^{-6} \rightarrow 1 \times 10^{-7}$
↓ ↘
Make this one bigger Make this one smaller

10^{-7} is smaller than 10^{-6}

$\sqrt{ab} = \sqrt{a} \times \sqrt{b}$

$2\sqrt{x^4} = (x^4)^{1/2} = x^2$

$3\sqrt{10^9} = (10^9)^{1/3} = 10^3$

$4\sqrt{10^{-20}} = (10^{-20})^{1/4} = 10^{-5}$

$3\sqrt{4 \times 10^{-10}} \rightarrow 5^3\sqrt{400 \times 10^{-12}}$
↓ ↘
Make this one bigger Make this one smaller

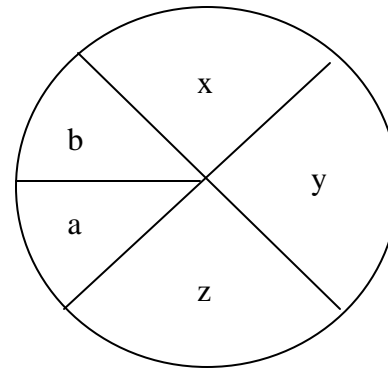
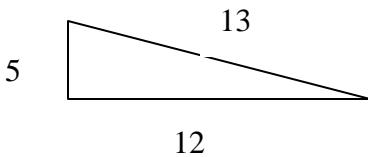
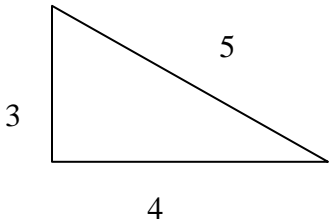
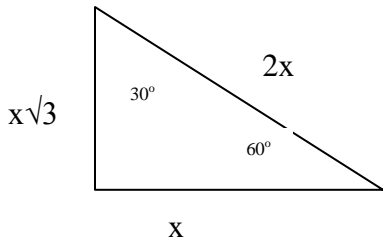
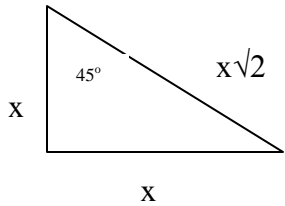
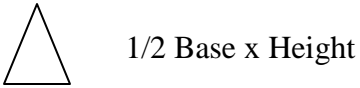
$$\sqrt[3]{400} \times \sqrt[3]{10^{-12}}$$

↓
Bracket

$$\begin{aligned} \sqrt[3]{350} &\approx 7 \\ \sqrt[3]{400} &= 7.3 \\ \sqrt[3]{512} &\approx 8 \end{aligned}$$

$$- \frac{4 \times 10^{-6}}{3 \times 10^{-7}} \rightarrow \frac{4 \times 10^{-6}}{3.7 \times 10^{-6}}$$

GEOMETRY



$$a + b + x + y + z = 360^\circ$$

Sum of interior angles of a $\triangle = 180^\circ$

Complimentary Angles $\rightarrow 90^\circ$

Supplementary Angles $\rightarrow 180^\circ$

$$a^2 + b^2 = c^2 \text{ for } 90^\circ \text{ or right } \triangle$$

Circle

Circumference $\rightarrow 2\pi r$

Area $\rightarrow \pi r^2$

GRAPHS

Straight Line $y = mx + b$ $m \rightarrow$ slope $b \rightarrow$ y- intercept

Example $\rightarrow y = 2x + b$

Perpendicular Line has a slope of $-1 / m$

Example $\rightarrow y = -\frac{1}{2}x + 5$

Parallel Line has the same slope but different y intercept

Example $\rightarrow y = 2x + 3 / y = 2x + 7$