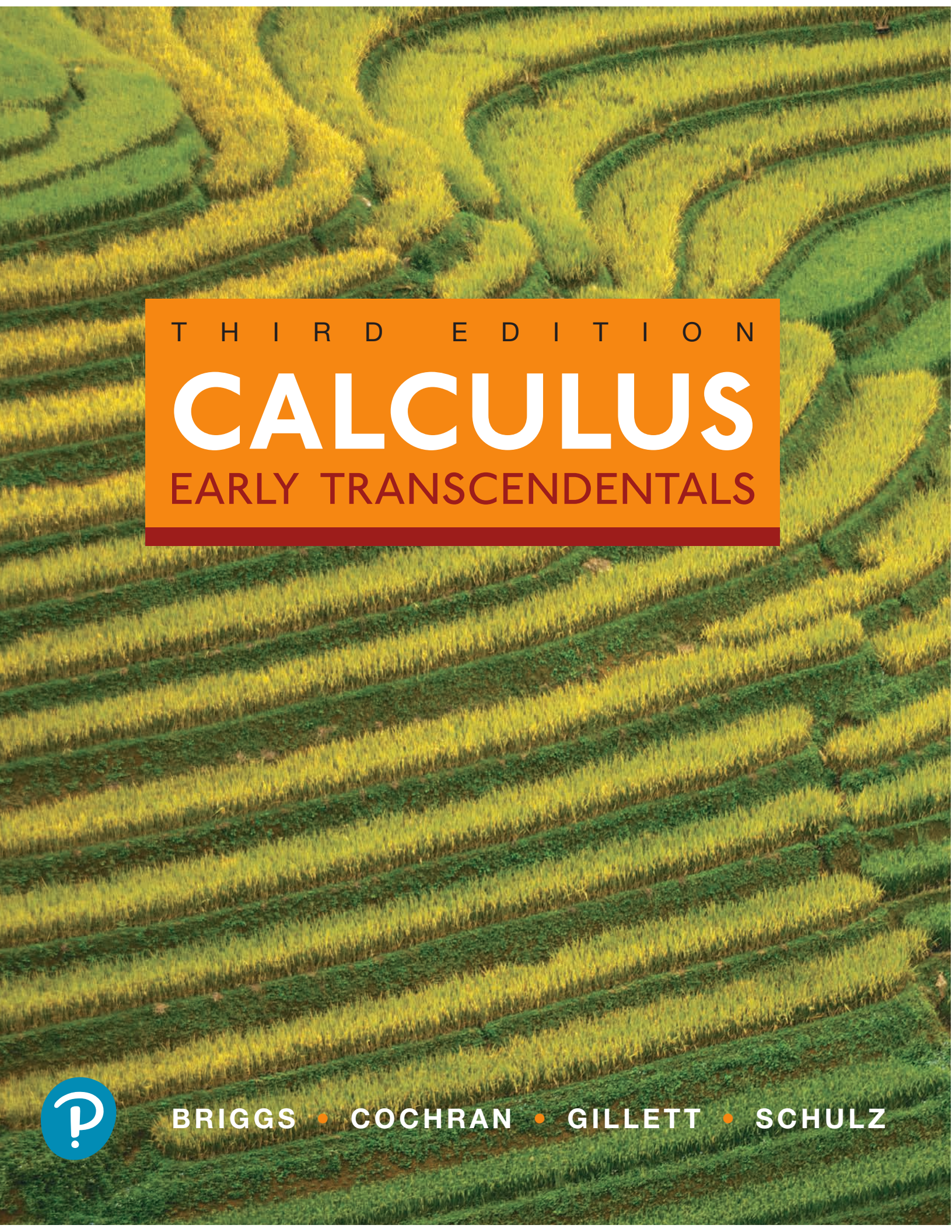

THIRD EDITION
CALCULUS
EARLY TRANSCENDENTALS
BRIGGS • COCHRAN • GILLETT • SCHULZ

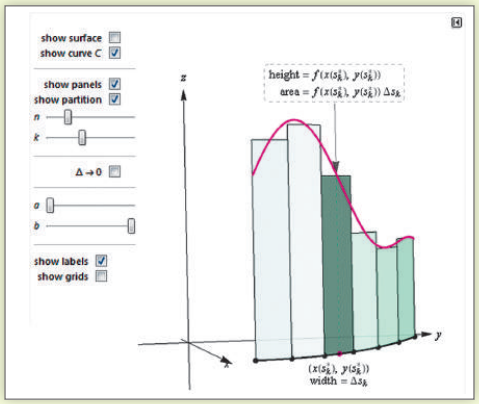
MyLab Math for *Calculus: Early Transcendentals,* 3e

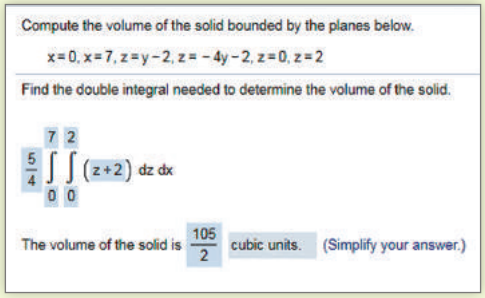
(access code required)

Used by over 3 million students a year, MyLab™ Math is the world's leading online program for teaching and learning mathematics. MyLab Math for *Calculus: Early Transcendentals,* 3e delivers text-specific assessment, tutorials, and multimedia resources that provide engaging and personalized experiences, so learning can happen in any environment and course format.

eBook with Interactive Figures

This groundbreaking eBook includes approximately 700 figures that can be manipulated to provide a deeper geometric understanding of key concepts. Plus, all-new **Enhanced Interactive Figures** incorporate functionality from several standard Interactive Figures, making each one mathematically richer and ideal for in-class demonstrations.



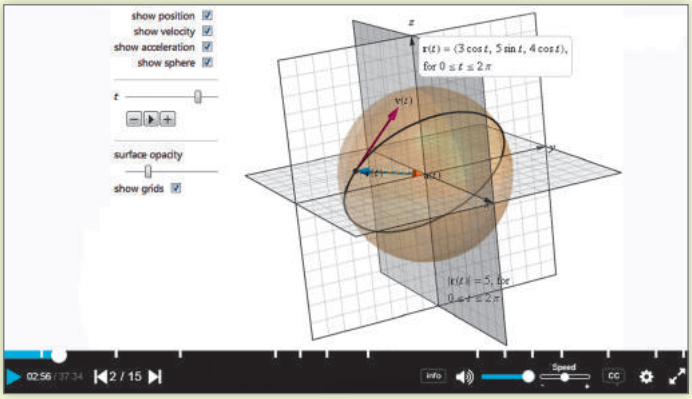


Questions that Deepen Understanding

MyLab Math includes a variety of question types designed to help students succeed in the course. In **Setup & Solve** questions, students show how they set up a problem as well as the solution, better mirroring what is required on tests. **Additional Conceptual Questions** were written by faculty at Cornell University to support deeper, theoretical understanding of the key concepts in calculus.

ALL NEW! Instructional Videos

For each section of the text, there is a newly recorded full-lecture video. Many videos make use of Interactive Figures to enhance understanding of concepts. To make them easier to navigate, each lecture video is segmented into parts (Introduction, Example, or Summary). The videos are assignable within MyLab Math, and a Guide to Video-Based Assignments shows which MyLab Math exercises correspond to each video.



pearson.com/mylab/math

ALGEBRA

Exponents and Radicals

$x^a x^b = x^{a+b}$ $\quad \dfrac{x^a}{x^b} = x^{a-b}$ $\quad x^{-a} = \dfrac{1}{x^a}$ $\quad (x^a)^b = x^{ab}$ $\quad \left(\dfrac{x}{y}\right)^a = \dfrac{x^a}{y^a}$

$x^{1/n} = \sqrt[n]{x}$ $\quad x^{m/n} = \sqrt[n]{x^m} = (\sqrt[n]{x})^m$ $\quad \sqrt[n]{xy} = \sqrt[n]{x}\sqrt[n]{y}$ $\quad \sqrt[n]{x/y} = \sqrt[n]{x}/\sqrt[n]{y}$

Factoring Formulas

$a^2 - b^2 = (a - b)(a + b)$ $\quad a^2 + b^2$ does not factor over real numbers.

$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$ $\quad a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

$a^n - b^n = (a - b)(a^{n-1} + a^{n-2}b + a^{n-3}b^2 + \cdots + ab^{n-2} + b^{n-1})$

Binomials

$(a \pm b)^2 = a^2 \pm 2ab + b^2$

$(a \pm b)^3 = a^3 \pm 3a^2b + 3ab^2 \pm b^3$

Binomial Theorem

$$(a + b)^n = a^n + \binom{n}{1}a^{n-1}b + \binom{n}{2}a^{n-2}b^2 + \cdots + \binom{n}{n-1}ab^{n-1} + b^n,$$

where $\dbinom{n}{k} = \dfrac{n(n-1)(n-2)\cdots(n-k+1)}{k(k-1)(k-2)\cdots 3\cdot 2\cdot 1} = \dfrac{n!}{k!(n-k)!}$

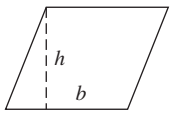
Quadratic Formula

The solutions of $ax^2 + bx + c = 0$ are

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

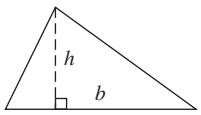
GEOMETRY

Parallelogram



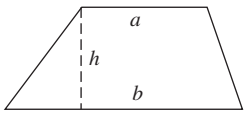
$A = bh$

Triangle



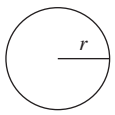
$A = \frac{1}{2}bh$

Trapezoid



$A = \frac{1}{2}(a + b)h$

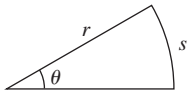
Circle



$A = \pi r^2$

$C = 2\pi r$

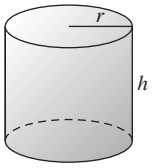
Sector



$A = \frac{1}{2}r^2\theta$

$s = r\theta$ (θ in radians)

Cylinder

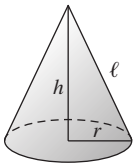


$V = \pi r^2 h$

$S = 2\pi rh$

(lateral surface area)

Cone

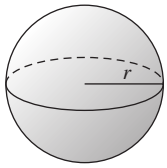


$V = \frac{1}{3}\pi r^2 h$

$S = \pi r\ell$

(lateral surface area)

Sphere



$V = \frac{4}{3}\pi r^3$

$S = 4\pi r^2$

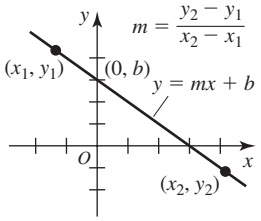
Equations of Lines and Circles

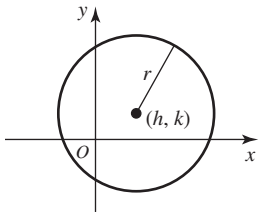
$m = \dfrac{y_2 - y_1}{x_2 - x_1}$ slope of line through (x_1, y_1) and (x_2, y_2)

$y - y_1 = m(x - x_1)$ point–slope form of line through (x_1, y_1) with slope m

$y = mx + b$ slope–intercept form of line with slope m and y-intercept $(0, b)$

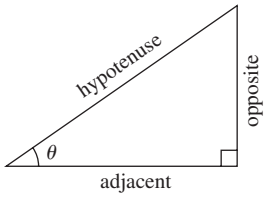
$(x - h)^2 + (y - k)^2 = r^2$ circle of radius r with center (h, k)





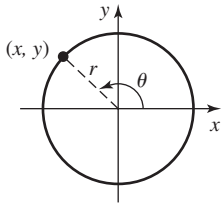
$(x - h)^2 + (y - k)^2 = r^2$

TRIGONOMETRY



$$\cos\theta = \frac{\text{adj}}{\text{hyp}} \quad \sin\theta = \frac{\text{opp}}{\text{hyp}} \quad \tan\theta = \frac{\text{opp}}{\text{adj}}$$

$$\sec\theta = \frac{\text{hyp}}{\text{adj}} \quad \csc\theta = \frac{\text{hyp}}{\text{opp}} \quad \cot\theta = \frac{\text{adj}}{\text{opp}}$$

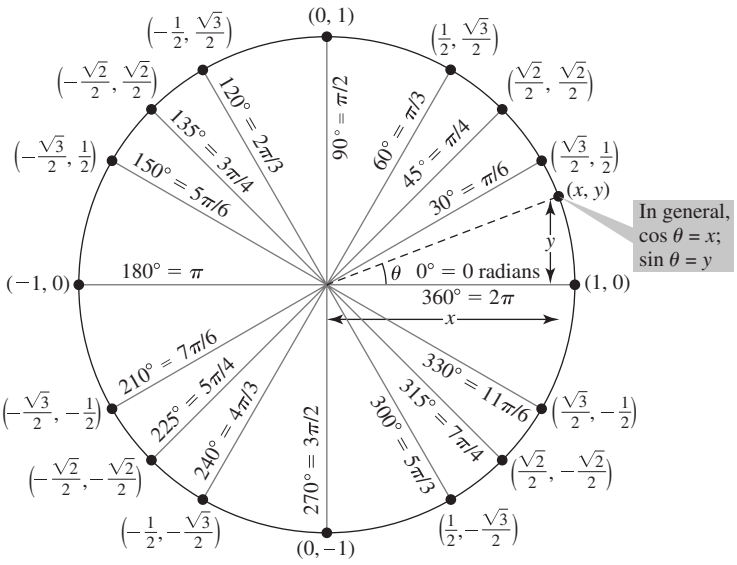


$$\cos\theta = \frac{x}{r} \quad \sec\theta = \frac{r}{x}$$

$$\sin\theta = \frac{y}{r} \quad \csc\theta = \frac{r}{y}$$

$$\tan\theta = \frac{y}{x} \quad \cot\theta = \frac{x}{y}$$

(*Continued*)



Reciprocal Identities

$$\tan\theta = \frac{\sin\theta}{\cos\theta} \quad \cot\theta = \frac{\cos\theta}{\sin\theta} \quad \sec\theta = \frac{1}{\cos\theta} \quad \csc\theta = \frac{1}{\sin\theta}$$

Pythagorean Identities

$$\sin^2\theta + \cos^2\theta = 1 \quad \tan^2\theta + 1 = \sec^2\theta \quad 1 + \cot^2\theta = \csc^2\theta$$

Sign Identities

$$\sin(-\theta) = -\sin\theta \quad \cos(-\theta) = \cos\theta \quad \tan(-\theta) = -\tan\theta$$
$$\csc(-\theta) = -\csc\theta \quad \sec(-\theta) = \sec\theta \quad \cot(-\theta) = -\cot\theta$$

Double-Angle Identities

$$\sin 2\theta = 2\sin\theta\cos\theta$$

$$\cos 2\theta = \cos^2\theta - \sin^2\theta = 2\cos^2\theta - 1 = 1 - 2\sin^2\theta$$

$$\tan 2\theta = \frac{2\tan\theta}{1 - \tan^2\theta}$$

Half-Angle Identities

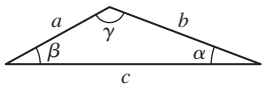
$$\cos^2\theta = \frac{1 + \cos 2\theta}{2} \qquad \sin^2\theta = \frac{1 - \cos 2\theta}{2}$$

Addition Formulas

$$\sin(\alpha + \beta) = \sin\alpha\cos\beta + \cos\alpha\sin\beta \qquad \sin(\alpha - \beta) = \sin\alpha\cos\beta - \cos\alpha\sin\beta$$
$$\cos(\alpha + \beta) = \cos\alpha\cos\beta - \sin\alpha\sin\beta \qquad \cos(\alpha - \beta) = \cos\alpha\cos\beta + \sin\alpha\sin\beta$$
$$\tan(\alpha + \beta) = \frac{\tan\alpha + \tan\beta}{1 - \tan\alpha\tan\beta} \qquad \tan(\alpha - \beta) = \frac{\tan\alpha - \tan\beta}{1 + \tan\alpha\tan\beta}$$

Law of Sines

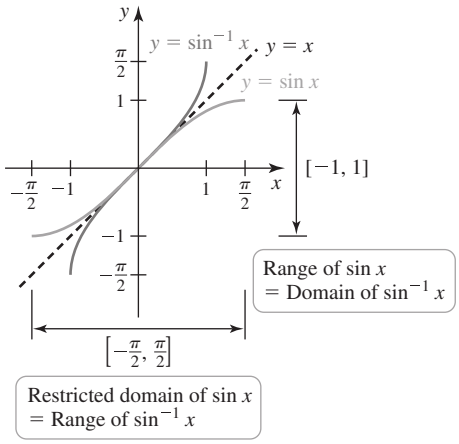
$$\frac{\sin\alpha}{a} = \frac{\sin\beta}{b} = \frac{\sin\gamma}{c}$$

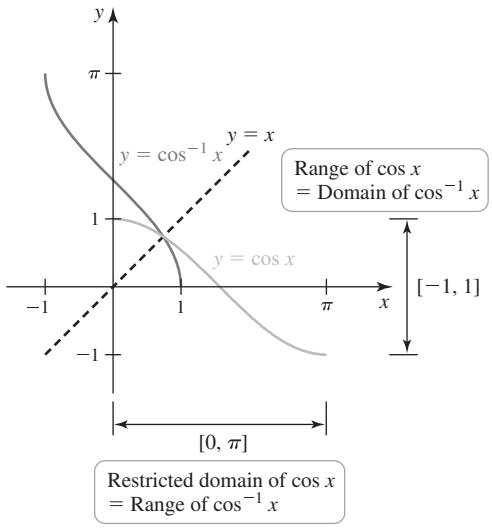


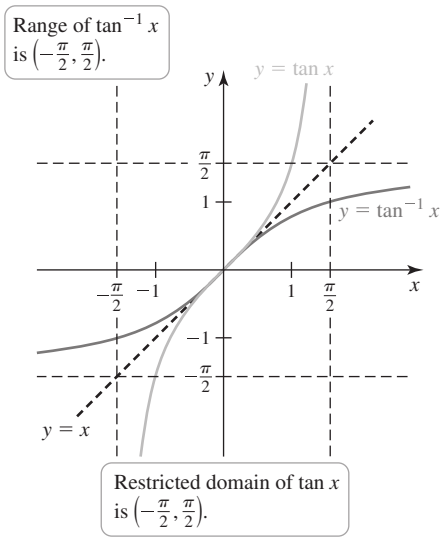
Law of Cosines

$$a^2 = b^2 + c^2 - 2bc\cos\alpha$$

Graphs of Trigonometric Functions and Their Inverses







Calculus

EARLY TRANSCENDENTALS

Third Edition

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For Julie, Susan, Sally, Sue,
Katie, Jeremy, Elise, Mary, Claire, Katie, Chris, and Annie,
whose support, patience, and encouragement made this book possible.

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