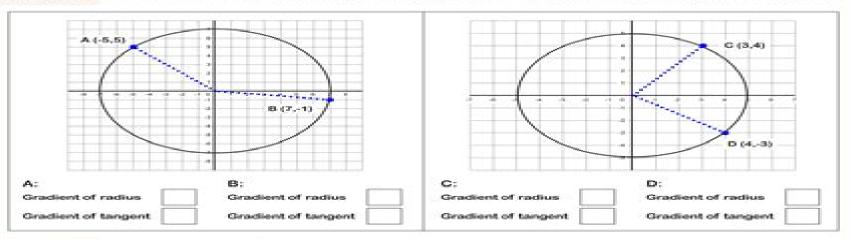
Equations of Lines Tangent to Circles



Section A For the circles shown, find the gradient of the radius and gradient of the tangent at the points.



Section B Find the equation of the tangents to the circles at the points.

1) $x^2 + y^2 = 50$ at (-5, -5)

2) $x^2 + y^2 = 50$ at (7, 1)

3) $x^2 + y^2 = 25$ at (4, 3)

4) $x^2 + y^2 = 25$ at (-3, 4)

Section C Find the equation of the tangents to the circles at the points.

- x² + y² = 20 when x = 2 and y > 0
- 2) x2 + y2 = 5 when x = -2 and y > 0
- 3) $x^2 + y^2 = 13$ when x < 0 and y = -2
- 4) $x^2 + y^2 = 41$ when x > 0 and y = -5

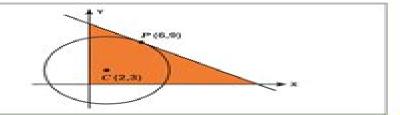
Section D Find the points where the tangents to the circles intersect the coordinate axes.

1) $x^2 + y^2 = 45$ at (6,3)

2) $x^2 + y^2 = 29$ at (-5,2)

EXTENSION:

A circle with centre C(2,3) passes through the point P(6,9). The tangent to the circle at the point P forms a triangle with the coordinate axes. Find the area of the triangle.



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chapters represent a variety of research approaches and perspectives from learners educators and parents of learners but all share a common focus on challenges faced by educators and learners as well as opportunities to use technology as a tool to maximize student learning during a worldwide pandemic Technology's Challenges and Solutions in K 16 Education during a Worldwide Pandemic will be a key resource for educators academics researchers and students of Education Instructional Design and Technology Educational Leadership and Policy Educational Research Educational Technology Research Methods and Sociology STEM Education and Curriculum and Instruction The chapters included in this book were originally published Calculus-1: Course in Mathematics for the IIT-JEE and Other as a special issue of Computers in the Schools **Engineering Entrance Examinations** K.R.Choubey, Ravikant Choubey, Chandrakant Chouby, **Inclusive Mathematics** 11-18 Mike Ollerton, Anne Watson, 2001 Founded on the principle that all learners are capable of sophisticated mathematical thought Inclusive Mathematics presents teachers with the tools to reach all students no matter their backgrounds abilities or learning styles Maple Animation John F. Putz, 2018-07-31 There is nothing quite like that feeling you get when you see that look of recognition and enjoyment on your students faces Not just the strong ones but everyone is nodding in agreement during your first explanation of the geometry of directional derivatives If you have incorporated animated demonstrations into your teaching you know how effective they can be in eliciting this kind of response You know the value of giving students vivid moving images to tie to concepts But learning to make animations generally requires extensive searching through a vast computer algebra system for the pertinent functions Maple Animation brings together virtually all of the functions and procedures useful in creating sophisticated animations using Maple 7 8 or 9 and it presents them in a logical accessible way The accompanying downloadable resources provide all of the Maple code used in the book including the code for more than 30 ready to use demonstrations From Newton's method to linear transformations the complete animations included in this book allow you to use them straight out of the box Careful explanations of the methods teach you how to implement your own creative ideas Whether you are a novice or an experienced Maple user Maple Animation provides the tools and skills to enhance your teaching and your students enjoyment of the subject through animation The Mindfulness and Character Strengths Workbook Ryan M. Niemiec, 2023-07-10 Do we really have all we need within us to be happier healthier less stressed or anxious in life This book shows you how that can be true people who apply this book s practices in their life have been shown to experience these benefits You will learn how you can build your happiness and manage your stress at the same time Dr Ryan Niemiec a global leader in character strengths and mindfulness expertly walks you through how you can develop your best qualities Some of these qualities whether it is courage zest creativity mindfulness hope self regulation or leadership may be hidden blocked or lost They are awaiting your discovery Modern science is revealing new pathways for living a full life The practices and ideas compiled in this book are some of the best strategies available to help you lead that life of authenticity peace strength and meaning And these strategies aren t just for you they re for all of us They help build

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