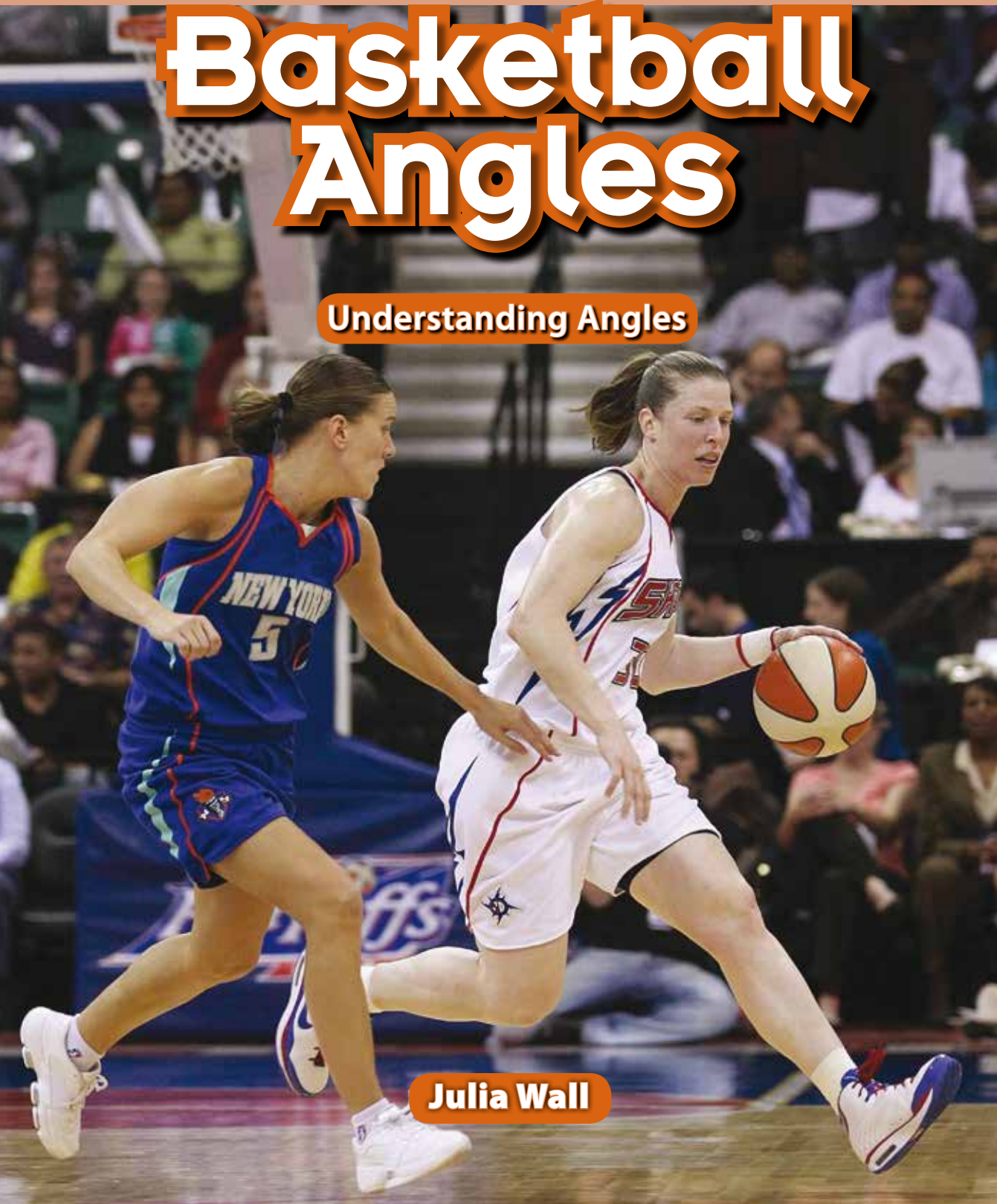
Basketball Angles

Understanding Angles



Julia Wall

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The Importance of Angles

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Basketball is an exciting game to play. It is a game of action. The team that scores the most points wins!

So how does a team score points? How does a player catch a great pass? The **angle** that the ball travels will decide whether the ball hits the basket or if the pass is caught.

Points are scored by throwing the ball into a basket.

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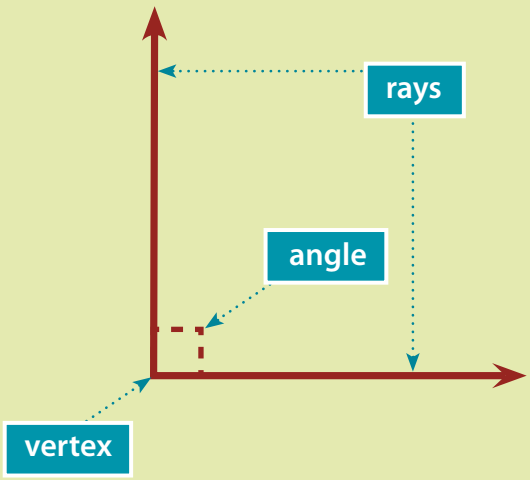
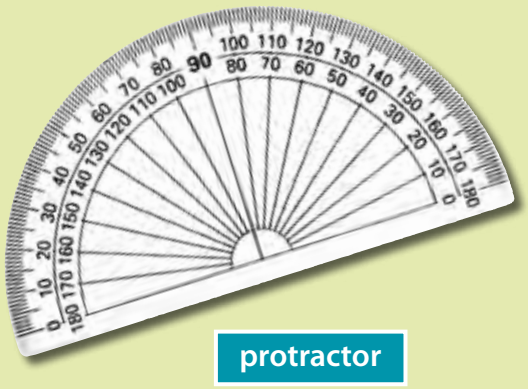
An angle is the opening or amount of turn between 2 line segments or rays that meet at a common point. This point is called the **vertex**. In sports, the vertex is often the ball, the goal, or the basket.

Angles can be measured using the unit *degrees*. The symbol for degrees is a small circle (°). Angles are often measured using protractors.





Meet Coach Olsen

Coach Olsen is a school basketball coach. She will give tips on various plays. You can find out more about Coach Olsen and the "3–2 Offense" play she uses with her team in the interview on page 22.

More About Angles

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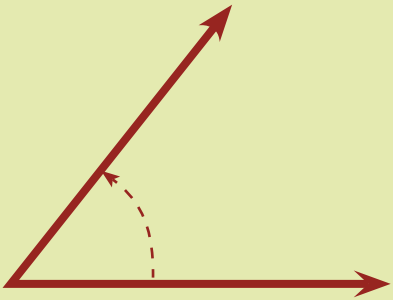
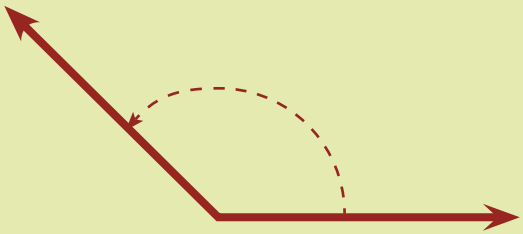
There are different kinds of angles. An acute angle is less than 90° in size. So if a basketball player is on an "acute angle to the basket," there is less than 90° between the player, the basket, and the middle of the free-throw line.

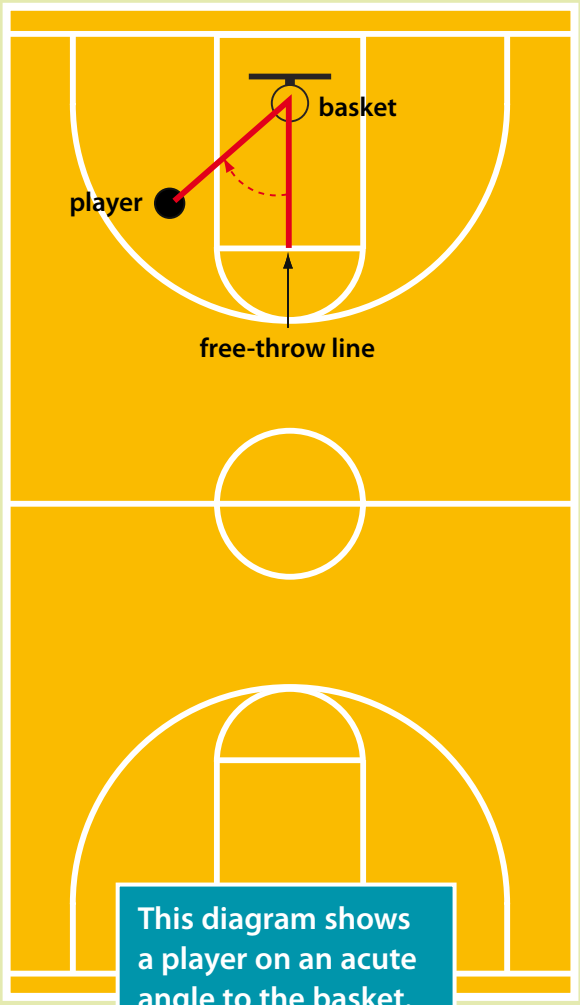


acute angle

An obtuse (ob-TOOS) angle is larger than 90° but is less than 180° in size.



obtuse angle



This diagram shows a player on an acute angle to the basket.

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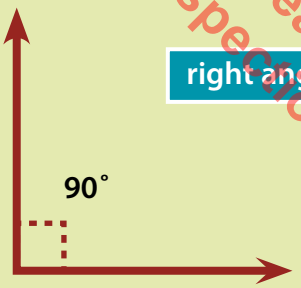
A right angle measures exactly 90°. The 2 line segments or rays that meet at a right angle are said to be **perpendicular** (pur-puhn-DIK-yuh-ler).

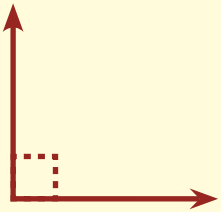


A straight angle, or line, measures 180°.

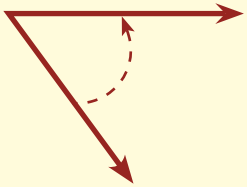
LET'S EXPLORE MATH

When two lines meet, they make an angle. Identify the types of angles that are shown below.

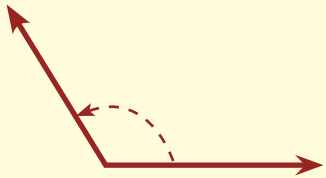
a.



c.



b.



d.

e. Explain how you know what type of angle each is.

Into Position

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A game of basketball starts with a jump ball at the center of the court. A basketball court has a rectangular shape. Two teams of 5 players each move the ball around the court. They do this mainly by **dribbling** and passing.

LET'S EXPLORE MATH

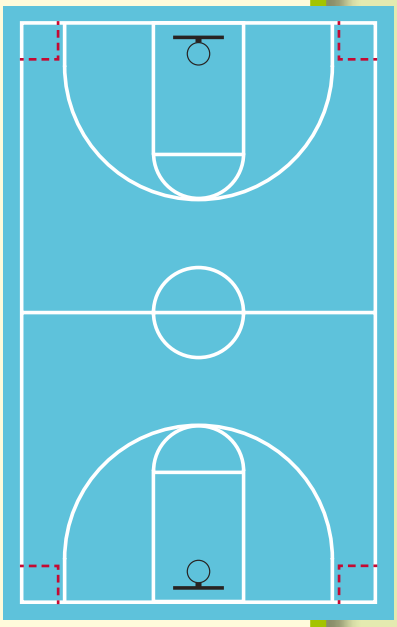
The diagram at right is a **bird's-eye view** of a basketball court. It is a rectangular shape.

Use the diagram to answer these questions.

a. What is the name of the angle at each vertex of the basketball court?

b. What is the angle measure of 1 vertex?

c. What is the sum of all the angles of the vertices?



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The Basketball Position

Basketball is a fast game. Sometimes it is hard to keep your balance when you stop and start so quickly. It is best to keep your body at a low angle to the ground. To do this, keep your knees bent slightly. You will create an acute angle between yourself and the court. Also, make sure you keep your feet a shoulder's width apart. Keep your arms around chest level.

Problem-Solving Activity

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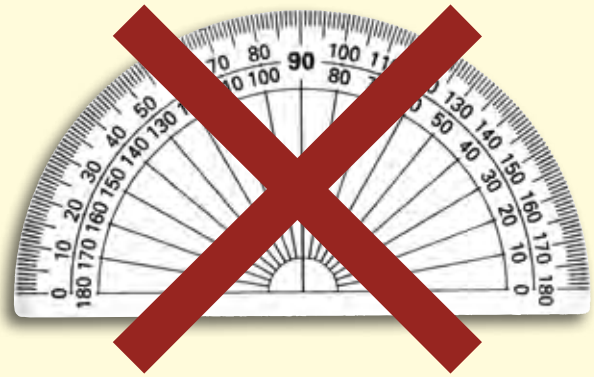
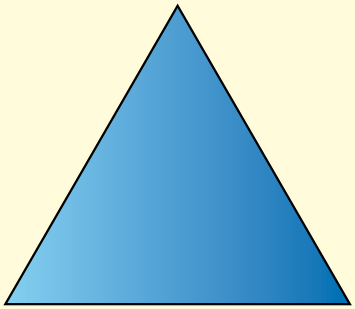
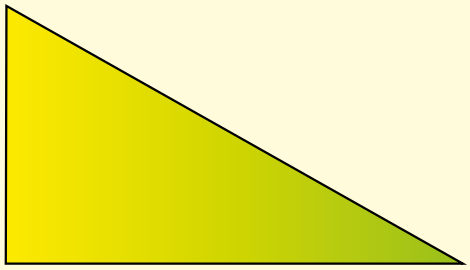
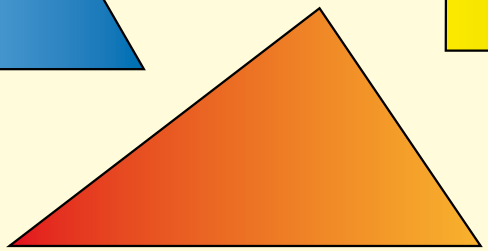
Angles in Triangles

Jada and her class have a math challenge to solve. They need to prove that the sum of the interior angles of *all* triangles will always equal 180°. But they may not use a protractor to help them.