



# Colin and Coco's Deliberate Practice

Year 5 Unit 13

Answers

## Geometry: Properties of Shapes





# Contents

This pack of deliberate practice is designed to be used flexibly to secure the manageable steps of this unit.

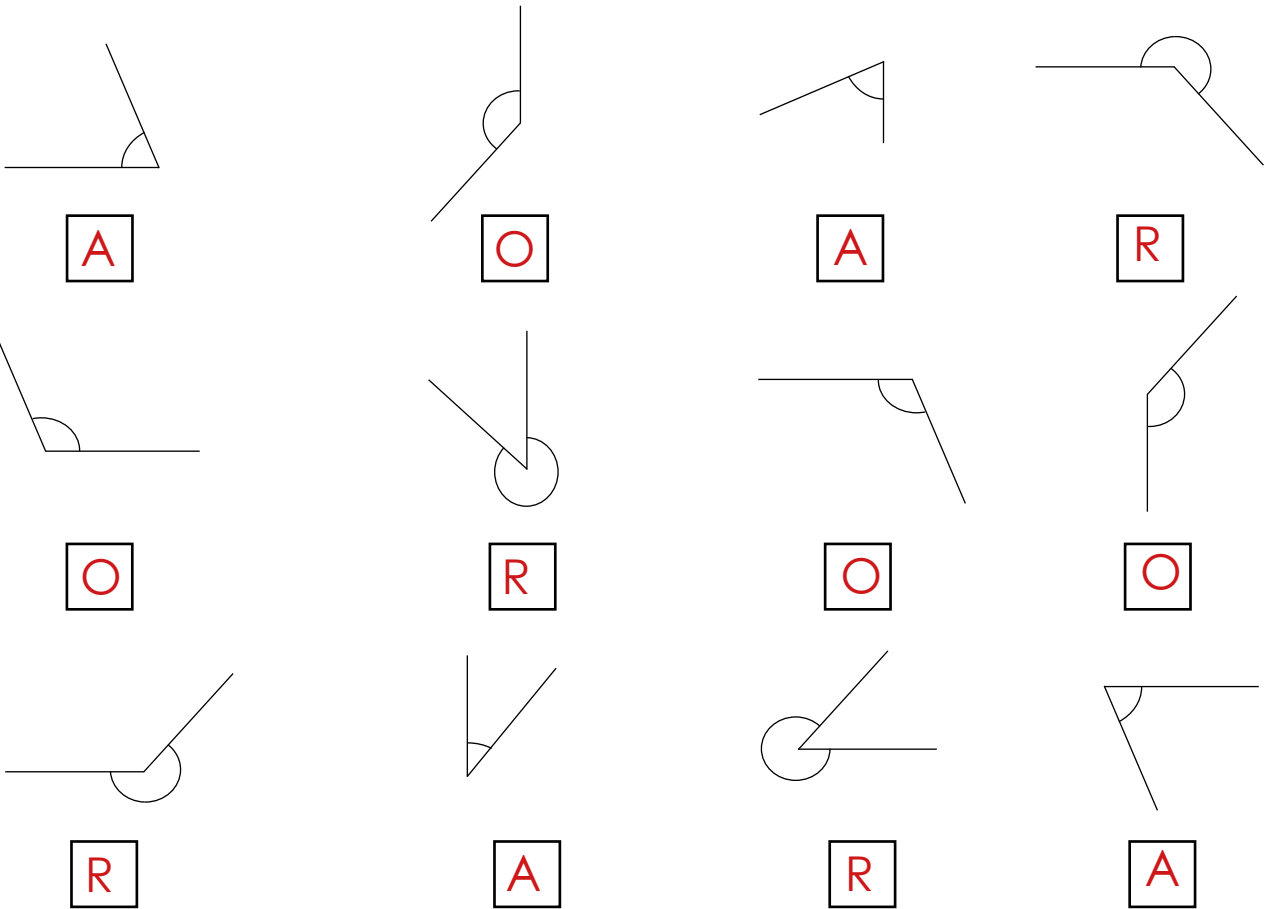
The table below indicates which activities are linked to which manageable steps.

|                                                                     | Do It | Challenge It | Play It |
|---------------------------------------------------------------------|-------|--------------|---------|
| Identify reflex angles                                              | 1     |              |         |
| Know angles are measured in degrees                                 |       | 1            |         |
| Estimate acute, obtuse and reflex angles                            |       |              | 1       |
| Use a protractor to measure acute angles                            | 2     |              | 2       |
| Use a protractor to measure obtuse angles                           |       | 2            | 2       |
| Use a protractor to measure reflex angles                           |       |              | 2       |
| Use a protractor to draw acute angles                               |       | 3            |         |
| Use a protractor to draw obtuse angles                              | 3     |              |         |
| Use a protractor to draw reflex angles                              |       |              | 3       |
| Identify and find angles at a point                                 | 4     |              |         |
| Identify and find angles at a point on a straight line              | 4     |              |         |
| Use the properties of rectangles to find missing lengths and angles |       | 4            |         |
| Know the difference between a regular and an irregular polygon      |       |              | 4       |



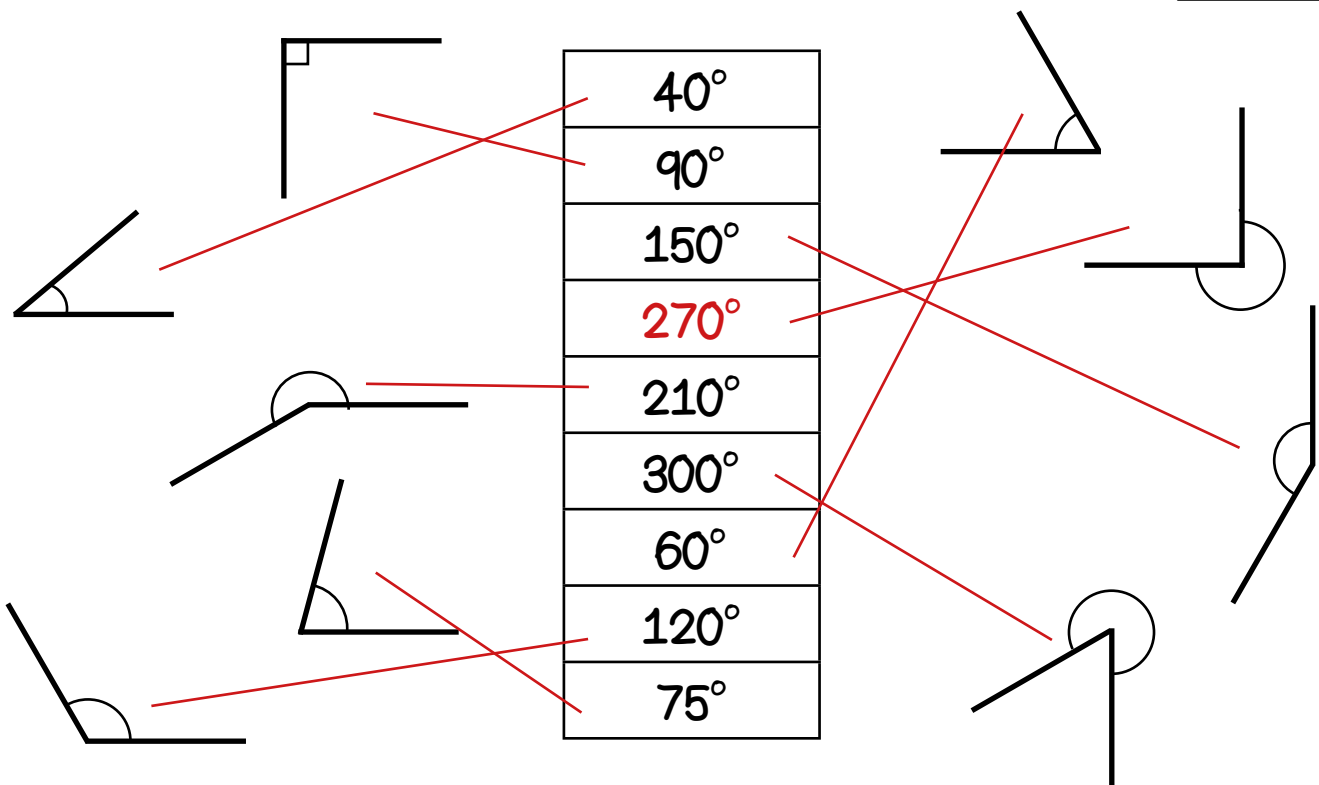
Do It 1

Label the angles Acute (A), Obtuse (O) or Reflex (R)



Match the angle with the value.  
Find the missing buddies.

Challenge It 1





# Estimate Angle Game

Play It 1

You need:

Card set A - drawn angles

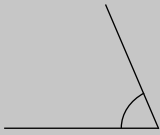
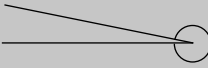
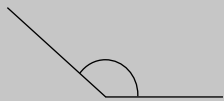
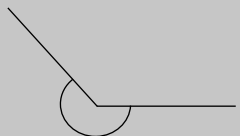
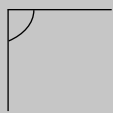
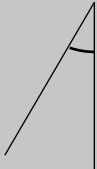
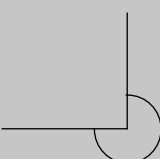
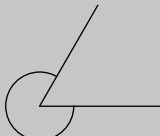
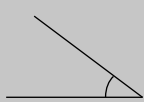
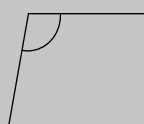
Card set B - size of angles in degrees

To play: All the cards are shuffled and placed face down.

Players take turns to turn over one card from Set A and one card from Set B

If card B is a good estimate of the angle, the player keeps the pair of cards. If not, the cards are replaced face down.

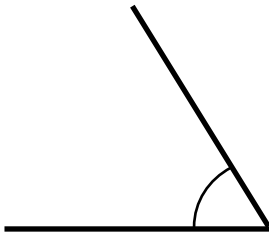
To win: The player with the highest number of cards wins.

|                                                                                     |             |                                                                                      |             |
|-------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------|-------------|
|    | $70^\circ$  |    | $350^\circ$ |
|  | $140^\circ$ |   | $230^\circ$ |
|  | $90^\circ$  |   | $25^\circ$  |
|  | $270^\circ$ |  | $300^\circ$ |
|  | $40^\circ$  |  | $100^\circ$ |
|  | $195^\circ$ |  | $165^\circ$ |

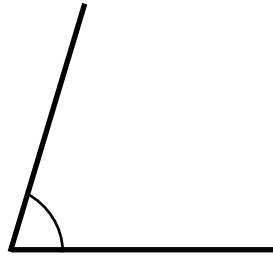


Measure the angles.

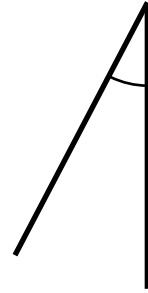
Do It 2



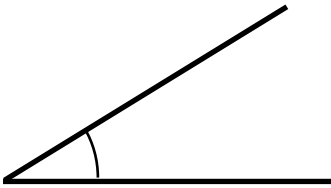
$60^\circ$



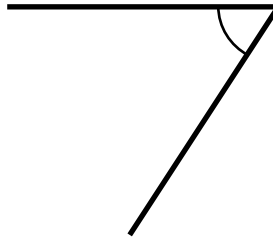
$75^\circ$



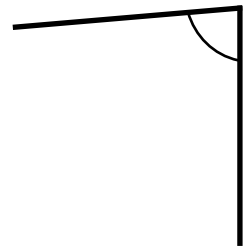
$25^\circ$



$30^\circ$



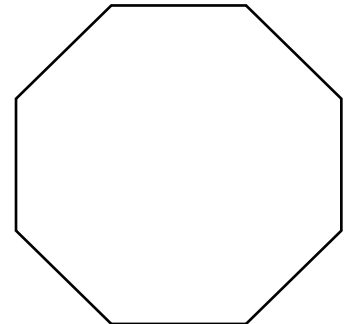
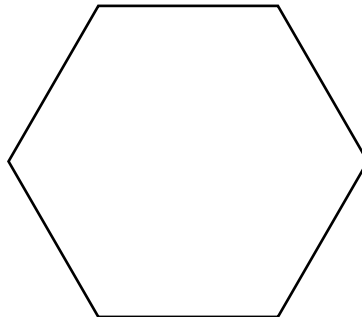
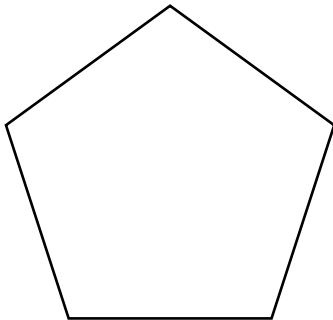
$55^\circ$



$85^\circ$

Polygon Angles

Challenge It 2



Complete the table by measuring the angles inside each polygon.

| Shape | Each Angle | Sum of all the angles |
|-------|------------|-----------------------|
|       |            |                       |
|       |            |                       |
|       |            |                       |

Use the table to predict the sum of all the angles in a decagon  $1440^\circ$



# Obtuse/Reflex Game

Play It 2

You need:

Card set A

Card set B

Card Set C

Protractor

To play:

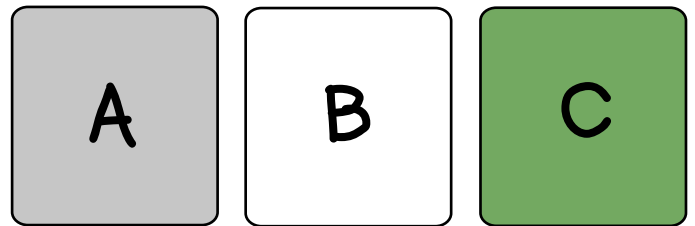
All the cards are shuffled and placed face down in separate piles.

Player 1 picks three cards - one card from Set A, one card from Set B, one card from Set C - to create a 3-digit number.

Both players draw an estimate of the angle.

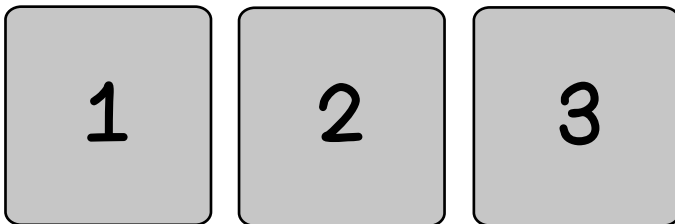
Both players measure their angle.

The player closest to the exact value wins 1 point.

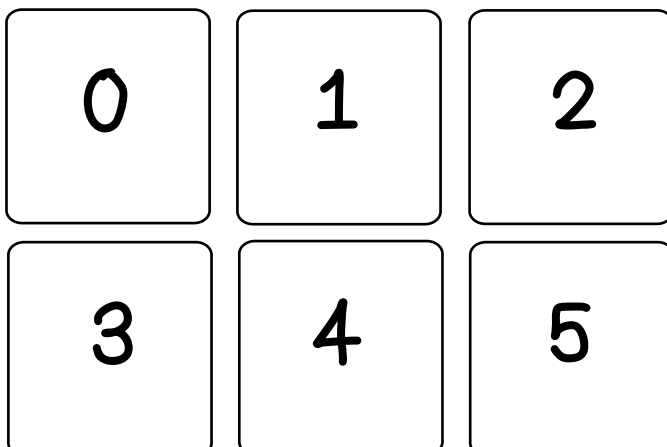


To win: The winner is the first player to score 10 points.

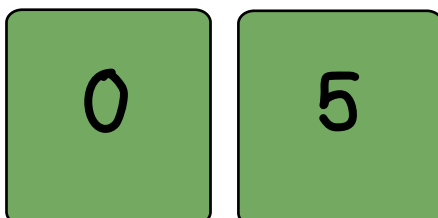
Card Set A



Card Set B



Card Set C





Do It 3

Use a protractor to draw the angles.

$140^\circ$

$120^\circ$

$100^\circ$

$145^\circ$

$125^\circ$

$157^\circ$

Draw triangles with 3 different acute angles  
with angles that are:

Challenge It 3

multiples of 10

multiples of 5

not multiples of 5 or 10



# Reflex Game

Play It 3

You need:

A protractor

To play:

Player 1 uses the protractor to draw a reflex angle.

Player 2 estimates the size of the angle.

If Player 2's estimate is within  $5^\circ$  of the exact value, they score 1 point.

To win:

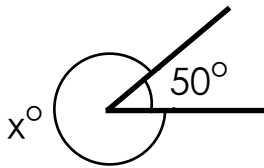
The winner is the first player to score 10 points.



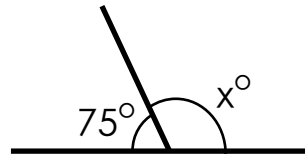
# Do It 4

Find the value of the missing angle  $x$

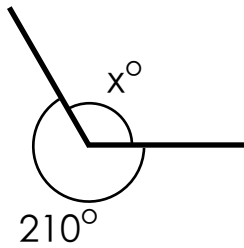
Diagrams not drawn to scale



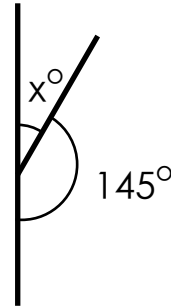
$$x = 310^\circ$$



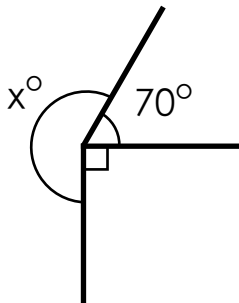
$$x = 105^\circ$$



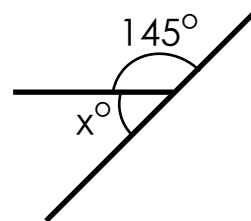
$$x = 150^\circ$$



$$x = 35^\circ$$



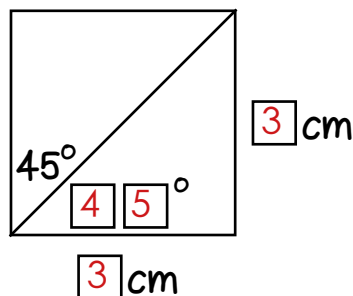
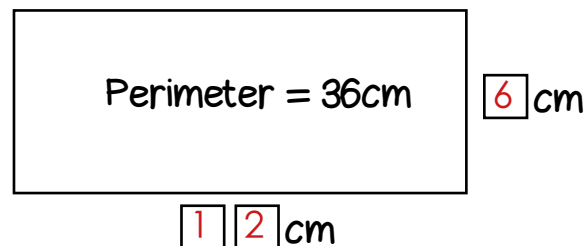
$$x = 200^\circ$$



$$x = 35^\circ$$

# Challenge It 4

Find the missing digits.  
Make the diagrams true in several different ways.



Solve the diagrams together using the digits  
1, 2, 3, 4, 5 and 6 at least once each.



# Regular/Irregular Snap

Play It 4

You need:

Card set A, Card Set B

To play:

Each player picks a set of cards, shuffles them and puts them in a pile face down.

Players take turns to place one card face up on the table.

If a regular shape is placed on top of another regular shape, the players shout "Regular".

The first person to shout "Regular" wins the pairs of cards.

To win: The player with the highest number of cards wins.

