Angles

90 < obtuse < 180°

A right angle is 90°

Angles on a straight line total 180°

0 < acute < 90

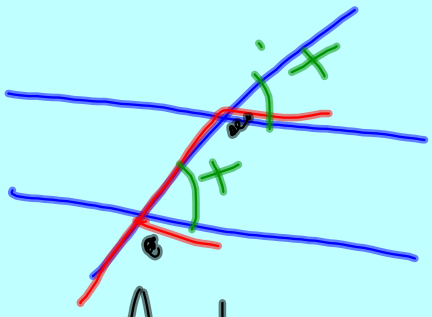
180 < reflex < 360

Angles round a point total 360°

Vertically opposite angles are equal

alternate angles are equal

Angles in a triangle total 180°



"F" angles

Corresponding angles are equal.

Angles in a quadrilateral total 360°

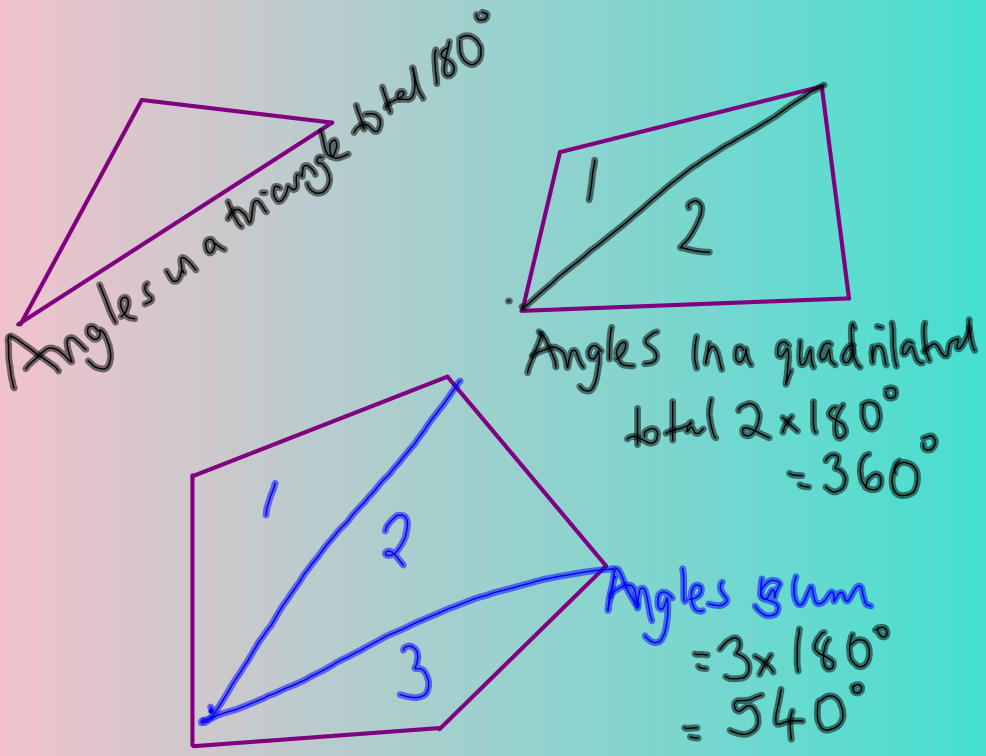
Angles

One acute, one obtuse, one reflex +

size	my actual	fred's actual	my points	
43°	45	106	2	63
128°				
250°				
91°				

2

Angles in polygons



Angles in a..

triangle (3sides) total 1 x 180^0 = 180^0

quadrilateral (4) total 2 x 180^0 = 360^0

pentagon (5) 3×180

(20) 18×180°

n sided polygon

$(n-2)\times 180^0$

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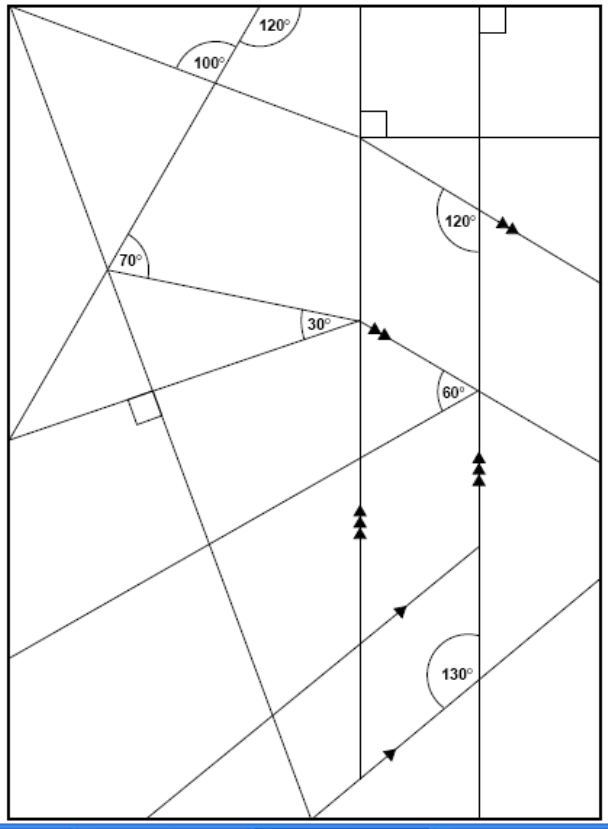
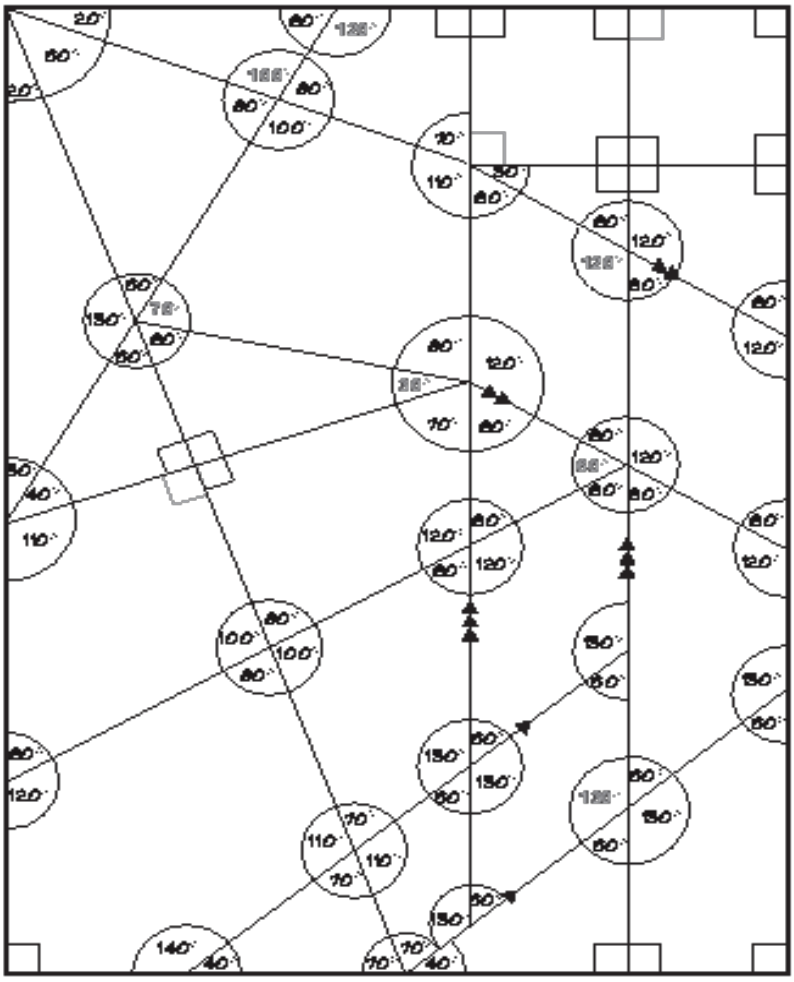
Unmarked Angles

Work out the unmarked angles inside this rectangle.
(Do not use an angle indicator.)





Using Brackets

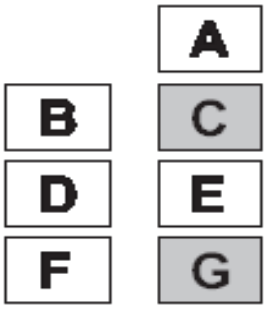
Many possible answers.

Vehicle Survey

Many possible answers.

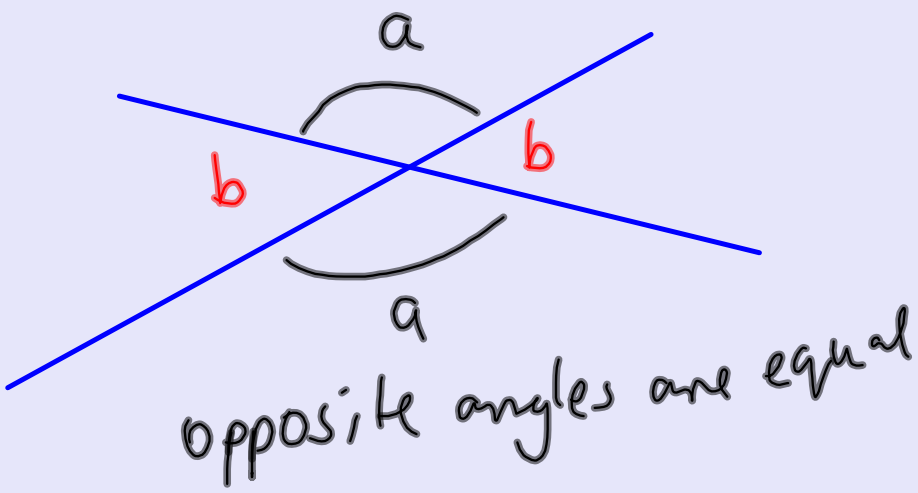
Weaving

C and G represent the same pattern from opposite sides.



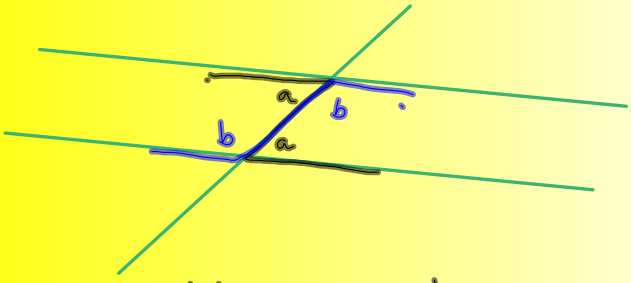
Vertically opposite angles

In your book draw two intersecting lines.
Measure all 4 angles.

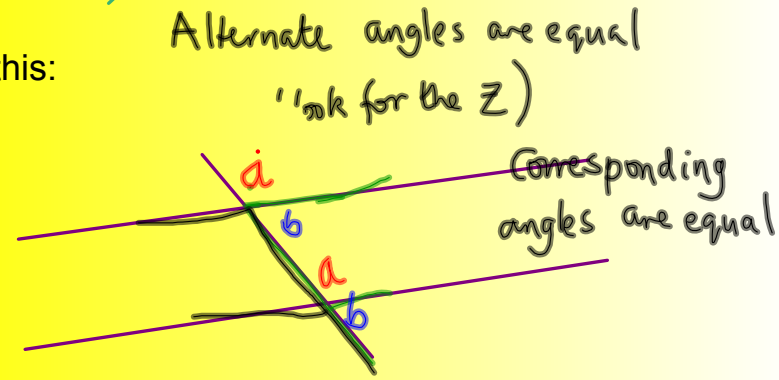


Angle fact 1:

In your book draw a pair of parallel lines and another line intersecting it. Like this:



or this:



Angle fact 2:

Alternate angles are equal.

To help find alternate angles look for the Z shape. Sometimes it is a reflected Z:

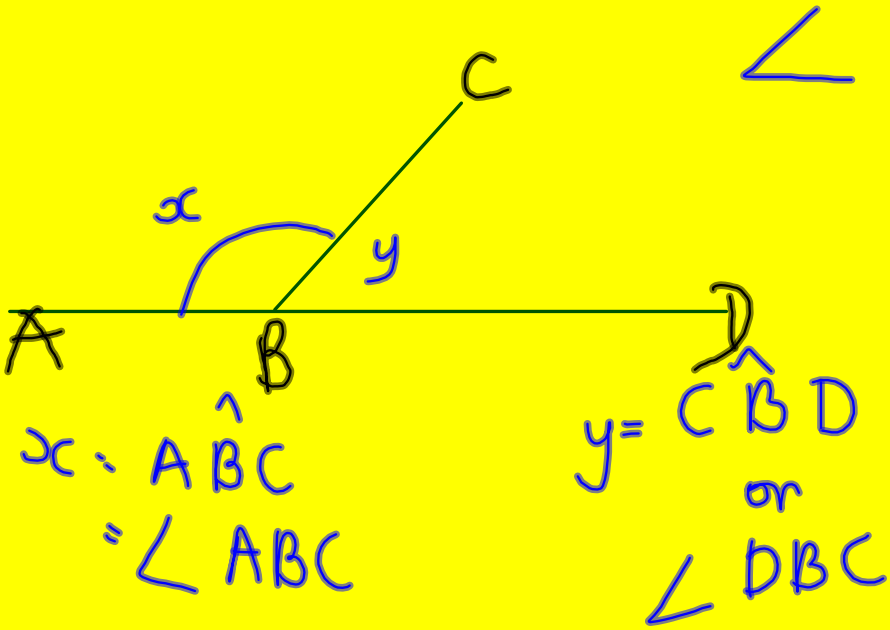
Angle fact 3:

Corresponding angles are equal.

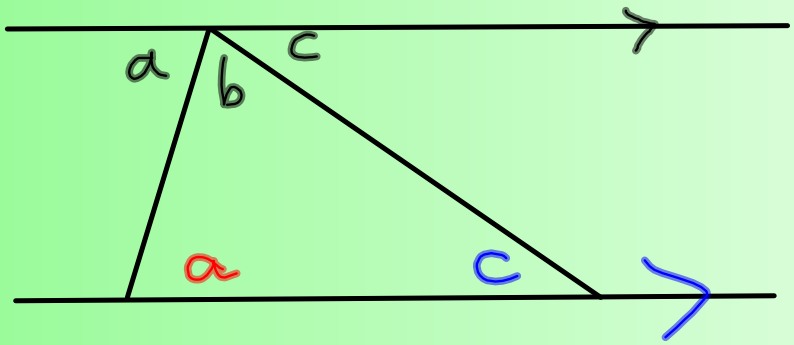
To help find alternate angles look for the F shape. Sometimes it is a reflected F:

Page 216 A1-16 orally
A17 onwards in exercise books

Using proper notation



Proof that the angle sum of a triangle is 180°



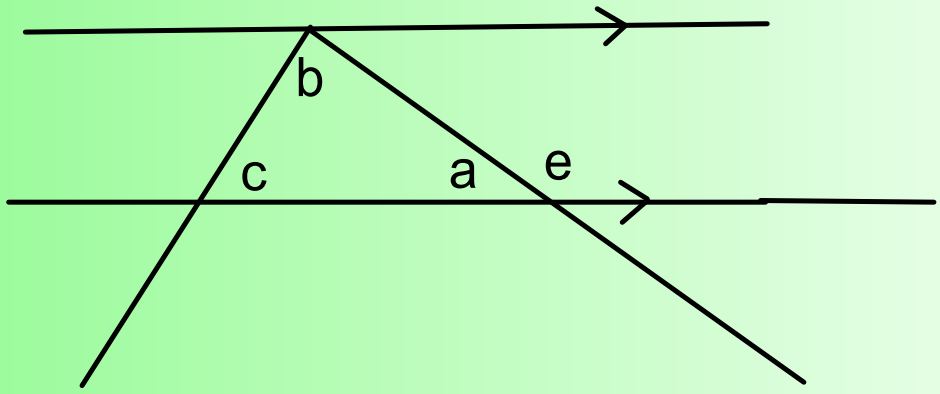
To prove: Angle sum: 180°

$a + b + c = 180°$ (angles on a straight line total 180°)

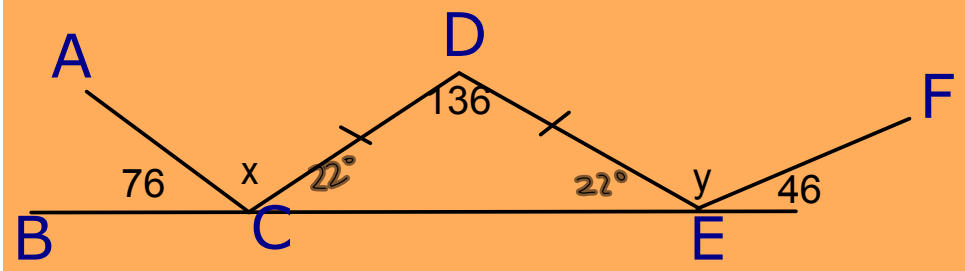
But $c = C$ (alternate angles are equal)

$a = a$ (alternate angles are equal)

But $a + b + c = 180°$ so angles in a triangle total 180°



The exterior angle of a triangle is equal to .....



$\triangle DCE$ is isosceles so

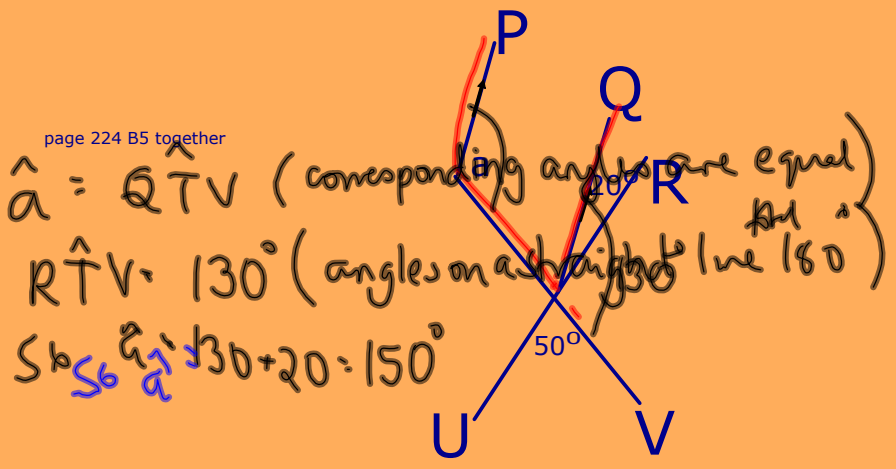
$D\hat{C}E = D\hat{E}C = \frac{(180-136)}{2} = \frac{44}{2} = 22°$

$\hat{x} = 180 - 76 - 22 = 82°$

$\hat{y} = 180 - 22 - 46 = 112°$

} angles on a straight line total 180°

page 224 B5 together



$\hat{a} = \hat{QTV}$ (corresponding angles are equal)

$\hat{RTV} = 130°$ (angles on a straight line 180°)

$130 + 20 = 150°$

Angle dominoes

Memory game

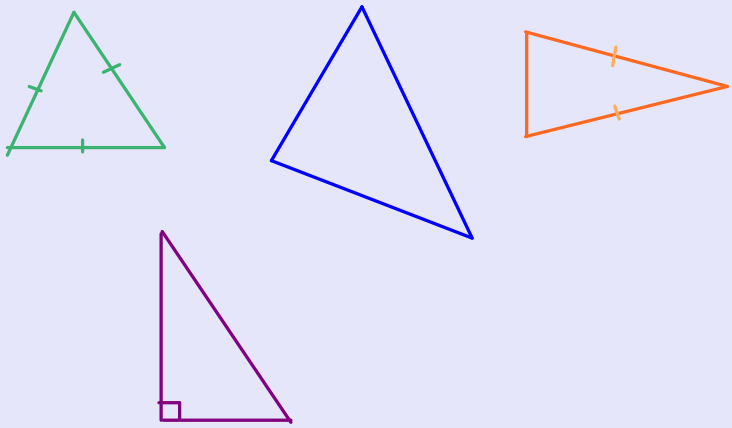
$E\hat{B}C = 117°$ corresponding to $D\hat{A}B$

$x = 117 - 38 = 79°$

Triangles

hwk page 225: B5,B6 and Test Yourself
For Tuesday

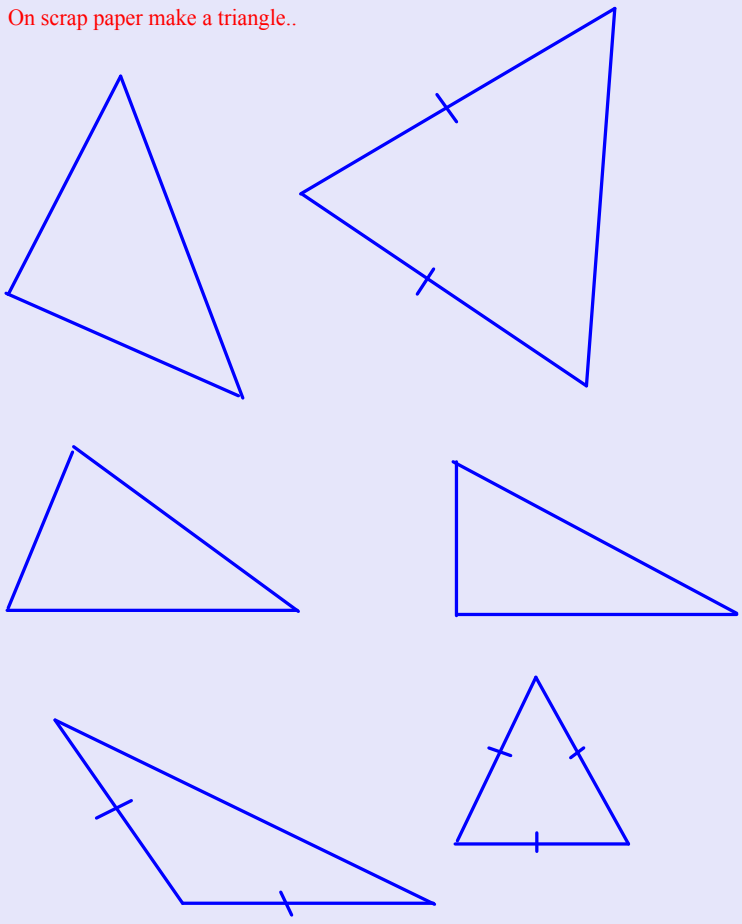
Can you name 4 different types of triangle?



Angles in a triangle

Demonstrate on geometers sketchpad

On scrap paper make a triangle..



Working in pairs how many different ones can you name and draw?

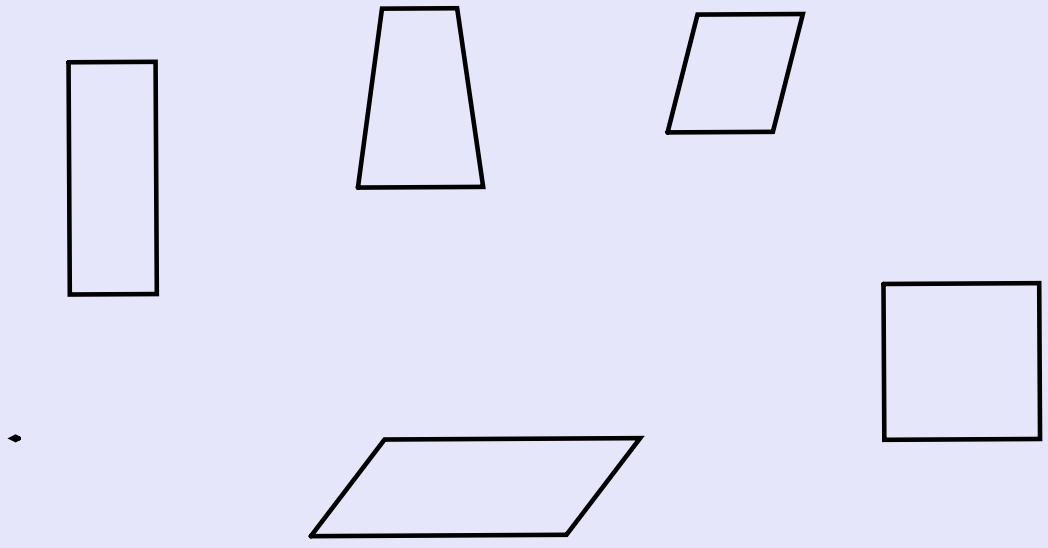
Which ones have parallel sides?

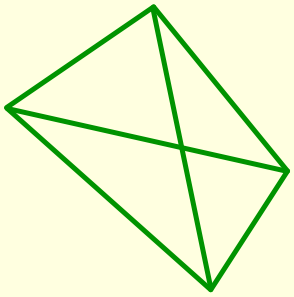
Which ones have right angles?

Which ones have diagonals that bisect each other?

?

Copy chart from wsr
Use gsp

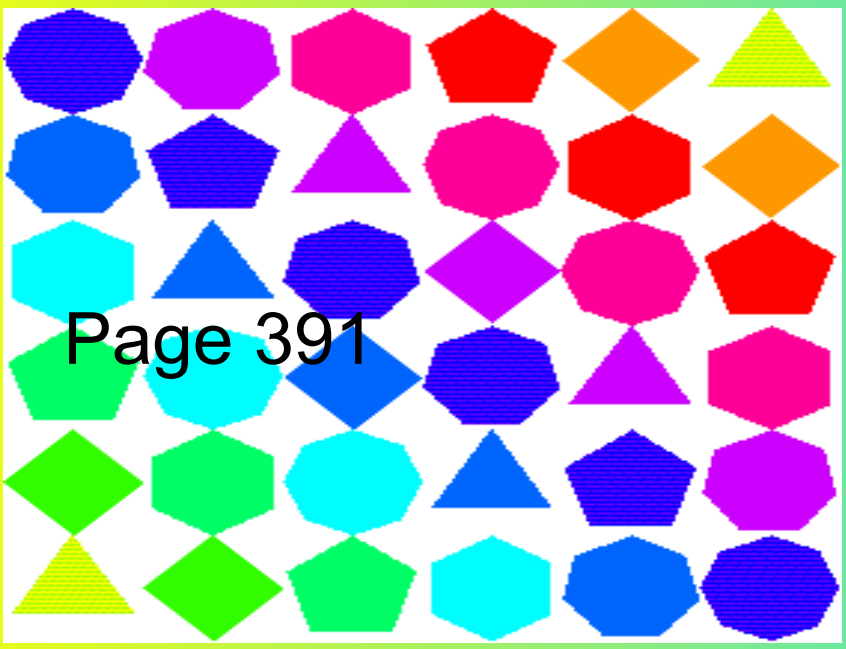




?

4cm	4cm	4cm	4cm	90^0
3cm	6cm	4cm	4cm	90^0
5cm	5cm	5cm	5cm	70^0
3cm	3cm	7cm	7cm	90^0
4cm	4cm	6cm	6cm	80^0
5cm	7cm	5cm	7cm	85^0
6cm	6cm	6cm	6cm	10^0
2cm	2cm	7cm	7cm	110^0

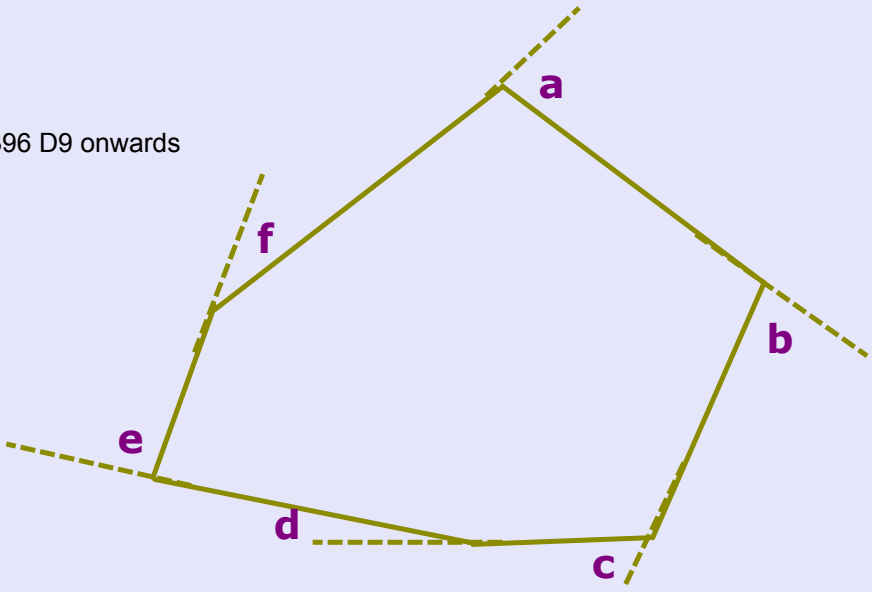
Which shapes tesselate?



Draw a polygon. It can have however many sides you like but more than 10 will be hard for you to handle.

Page 396 D9 onwards

E1-E3



Extend each side and letter each angle.

Measure each angle.

Attachments

YR 7 SSM2.doc

angles.gsp

angles in polygons.ppt

Angle properties.gsp