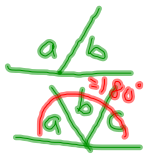
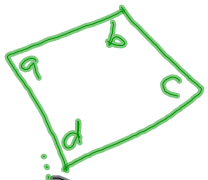
Test Review notes

Polygon rules:

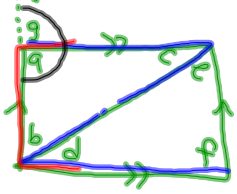
$a+b+c=180°$
$180-a-b=c$



$a+b=180°$
$a+b+c=180°$

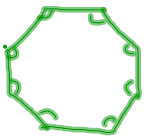


$a+b+c+d=360°$
$360°-a-b-c=d$



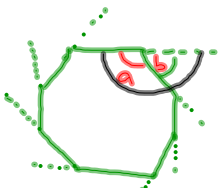
$g+b+c=180°$
$d+e+f=180°$
$a+c+e+f+d+b=360°$
$a=f \quad e=b \quad d=c$
$a+b+d=180°$
$g+a=180°$

Regular polygons (all sides equal and same amount of angles as sides)



Sum of interior angles
$S=(n-2)\times 180°$
$=(8-2)\times 180°$
$=6\times 180°$
$=1080°$

(n is the number of sides)



prove that all exterior angles add up to 360°
$180-a=b$
$b\times 8=360°$

irregular Polygon

$S=(n-2)\times 180°$
$=(6-2)\times 180°$
$=4\times 180°$
$=720°$

$720-a-b-c-d-e=f$

Ratios and Proportions

- Simplify $10:5 \overset{\div 5}{=} 2:1$ ← always divide to go smaller
- Equivalent higher ratios.

$10:5=100:50$ ($\times 10$, $\times 10$) ← always multiply to go bigger

which has the greater proportion of juice?

juice : water

6 : 5 or 10 : 9

$\frac{6}{5}$ $\times 9$ or $\frac{10}{9}$ $\times 5$

$\frac{54}{45}$ $\frac{50}{45}$

the greater proportion of juice.

- comparing ratios to the total amounts.

ex. finding out the colours of cars compared to the total.

5 : 6

yellow cars, red cars

Q- How many of each colour in a group of 33 cars?

yellow → 5 : 11 = n : 33

$\frac{5}{11} = \frac{n}{33}$ $5(33) = n(11)$ $165 = n(11)$ $\frac{165}{11} = 15$

∴ in a group of 33 cars, 15 will be yellow.

33 − 15 yellow = 18 red

$\frac{\text{dogs}}{\text{cats}} = \frac{5}{3}$ 5 : 3

if we have 48 cats how many dogs do we have?

$\frac{\text{dogs}}{\text{cats}}$ $\frac{5}{3} = \frac{n}{48}$ $240 = 3n$ $\frac{240}{3} = n$

$5(48) = 3n$ $80 = n$

∴ if we have 48 cats, we have 80 dogs.