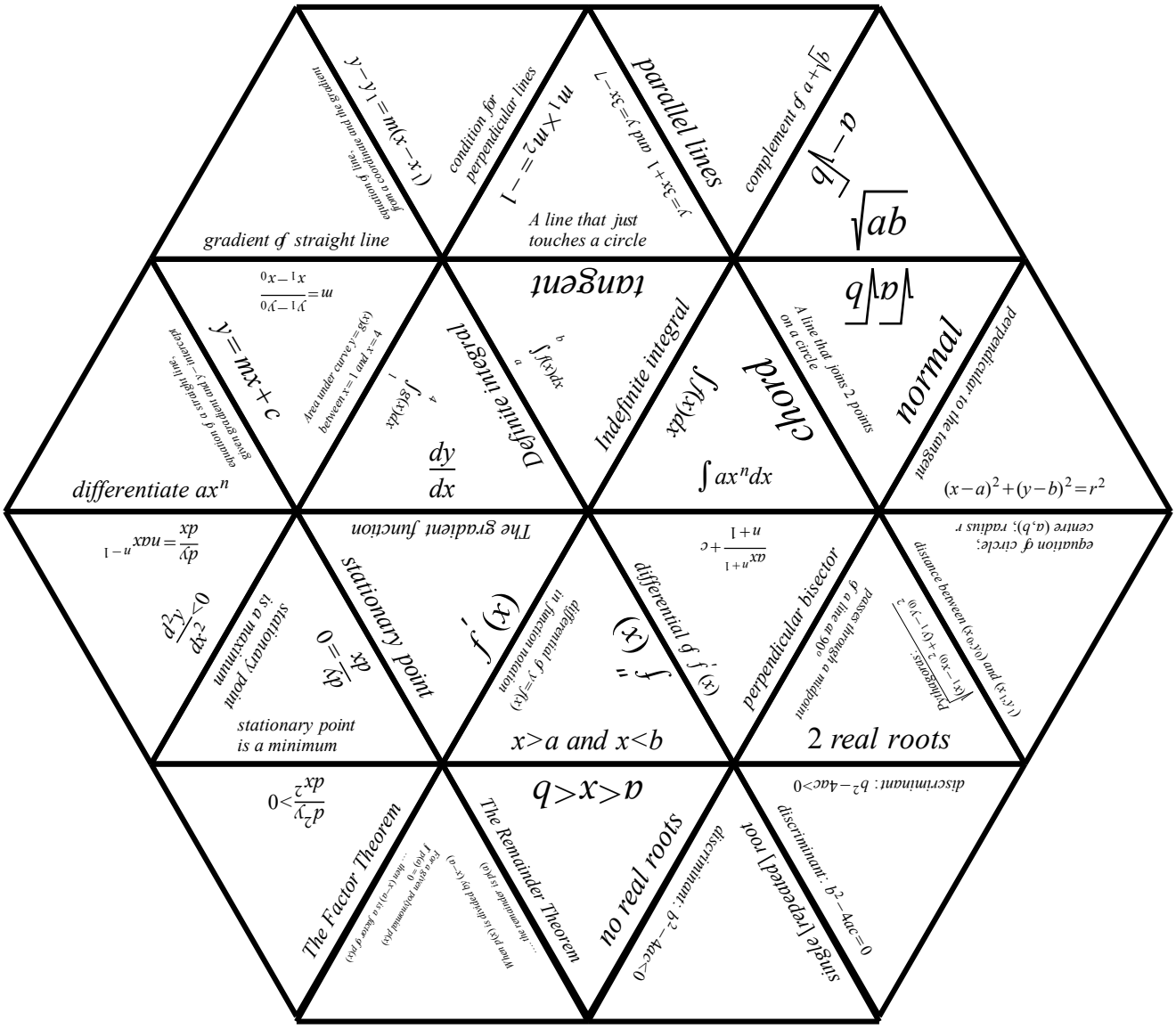
gradient of straight line
equation of line, from a coordinate and the gradient
$(y-y_1)=m(x-x_1)$
condition for perpendicular lines
$m_1\times m_2=-1$
A line that just touches a circle
parallel lines
$y=3x+1$ and $y=3x-7$
complement of $a+\sqrt{b}$
$a-\sqrt{b}$
$\sqrt{ab}$
$\frac{y_1-y_0}{x_1-x_0}=m$
$y=mx+c$
equation of a straight line, given gradient and $y-$intercept
differentiate ax^n
Area under curve $y=g(x)$ between $x=1$ and $x=4$
$\int_1^4 g(x)dx$
Definite integral
$\frac{dy}{dx}$
tangent
$\int_a^b f(x)dx$
Indefinite integral
$\int ax^n dx$
chord
A line that joins 2 points on a circle
$\sqrt{a}\sqrt{b}$
normal
perpendicular to the tangent
$(x-a)^2+(y-b)^2=r^2$
$\frac{dy}{dx}=nax^{n-1}$
$\frac{d^2y}{dx^2}<0$
stationary point is a maximum
stationary point
$\frac{dy}{dx}=0$
stationary point is a minimum
The gradient function
$f'(x)$
differential of $y=f(x)$ in function notation
$f''(x)$
differential of $f'(x)$
$\frac{ax^{n+1}}{n+1}+c$
$x>a$ and $x<b$
perpendicular bisector
passes through a midpoint of a line at 90°
Pythagoras: $\sqrt{(x_1-x_0)^2+(y_1-y_0)^2}$
distance between (x_0,y_0) and (x_1,y_1)
2 real roots
equation of circle: centre (a,b); radius r
$\frac{d^2y}{dx^2}>0$
The Factor Theorem
for a given polynomial $f(x)$: ...then $(x-a)$ is a factor of $f(x)$
$q>x>p$
The Remainder Theorem
When $f(x)$ is divided by $(x-a)$ ...the remainder is $f(a)$
no real roots
discriminant: $b^2-4ac<0$
discriminant: $b^2-4ac=0$
single (repeated) root
discriminant: $b^2-4ac>0$