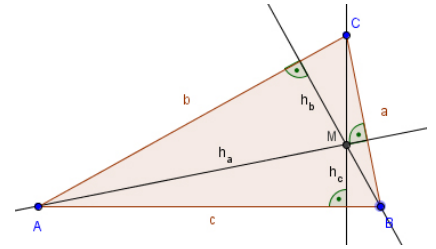


# H & S & U & I EINES DREIECKS

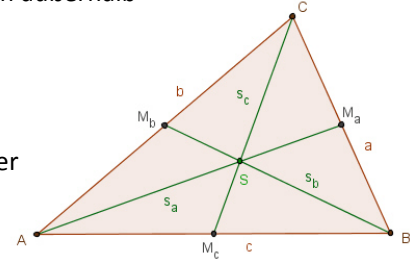
## 1. HÖHENSCHNITTPUNKT H

- ✓ Konstruktion: Einzeichnen von zwei bzw. drei Höhenlinien
- ✓ Höhenlinien  $h_a, h_b, h_c$  stehen jeweils normal auf die Seiten
- ✓ Lage: Bei spitzwinkligen Dreiecken innerhalb, bei stumpfwinkligen Dreiecken außerhalb



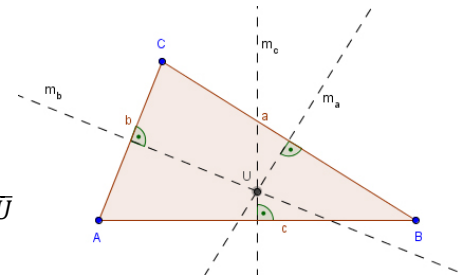
## 2. SCHWERPUNKT S

- ✓ Konstruktion: Einzeichnen von zwei bzw. drei Schwerlinien
- ✓ Schwerlinien  $s_a, s_b, s_c$  verlaufen von der Seitenmitte zum Eckpunkt gegenüber
- ✓ Lage: S liegt immer im Inneren eines Dreiecks



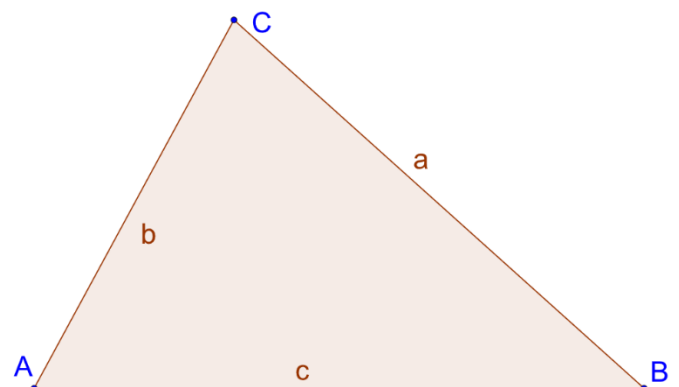
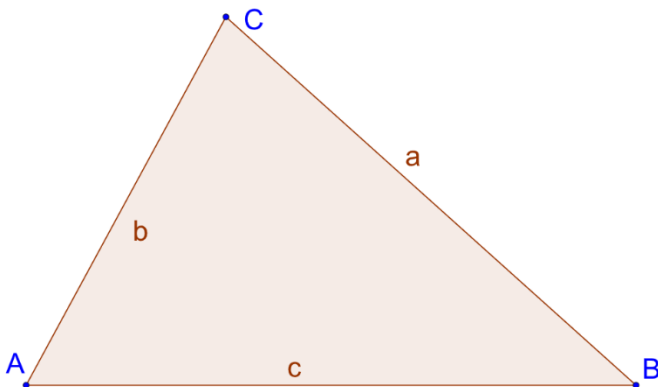
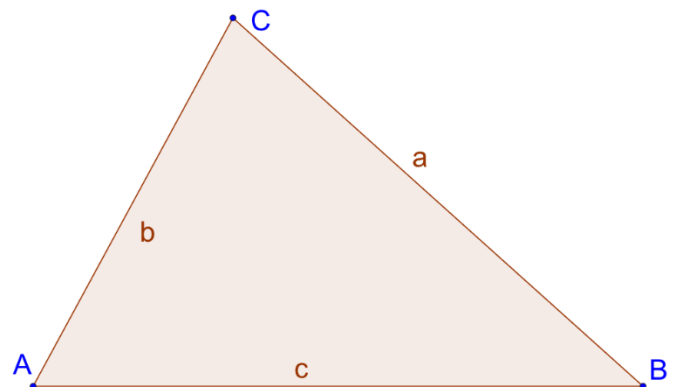
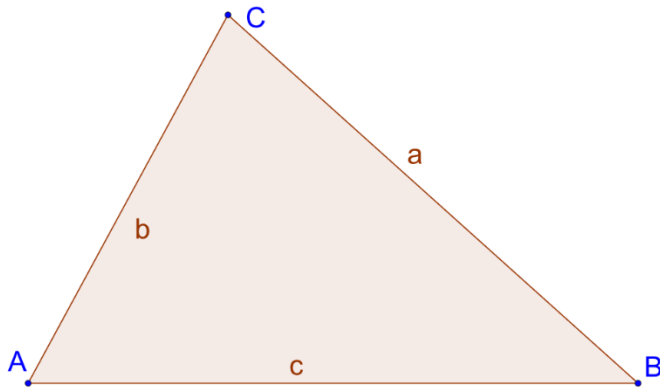
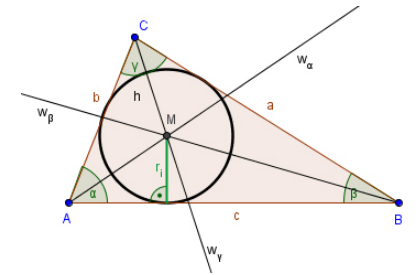
## 3. UMREISMITTELPUNKT U

- ✓ Konstruktion: Einzeichnen von zwei bzw. drei Streckensymmetralen
- ✓ Beschriftung der Streckensymmetralen:  $m_{AB}, m_{BC}, m_{AC}$
- ✓ Lage: kann innerhalb und außerhalb des Dreiecks liegen
- ✓ U liegt von den Eckpunkten A, B und C gleich weit entfernt
- ✓ Konstruktion des Umkreises mit Mittelpunkt U und Radius  $\overline{AU} = \overline{BU} = \overline{CU}$



## 4. INKREISMITTELPUNKT I

- ✓ Konstruktion: Einzeichnen von zwei bzw. drei Winkelsymmetralen
- ✓ Beschriftung der Winkelsymmetralen:  $w_\alpha, w_\beta, w_\gamma$
- ✓ Lage: I liegt immer im Inneren eines Dreiecks
- ✓ Radius des Inkreises: Normalabstand zu einer Seite des Dreiecks
- ✓ Normalabstand zu I ist von allen Dreiecksseiten gleich groß



# Mathematik in Zeiten von Corona

## Wissens-Check für schlaue Physiker und Physikerinnen

Fülle die Lücken zu den Dreiecken richtig aus!

- Die Winkelsumme eines jeden Dreiecks beträgt .....
- Die zwei gleich langen Seiten eines gleichschenkligen Dreiecks nennt man ....., die dritte Seite heißt .....
- Die Seite gegenüber dem rechten Winkel eines rechtwinkligen Dreiecks heißt ....., die beiden anderen Seiten nennt man .....
- Ein Dreieck, bei dem alle Seiten gleich lang sind, heißt .....
- Ein Dreieck, bei dem zwei Seiten gleich lang sind, heißt .....
- Wenn bei einem gleichschenkeligen Dreieck die Seite  $c$  die Basis ist, dann sind die Winkel ..... und ..... gleich groß.
- In einem gleichseitigen Dreieck haben alle Winkel eine Größe von .....
- Ein Dreieck, bei dem alle Winkel kleiner als  $90^\circ$  sind, heißt ..... Dreieck.
- Ein Dreieck, bei dem alle Seiten ungleich lang sind, heißt ..... Dreieck.
- Ein Dreieck, bei dem ein Winkel größer als  $90^\circ$  ist, heißt ..... Dreieck.

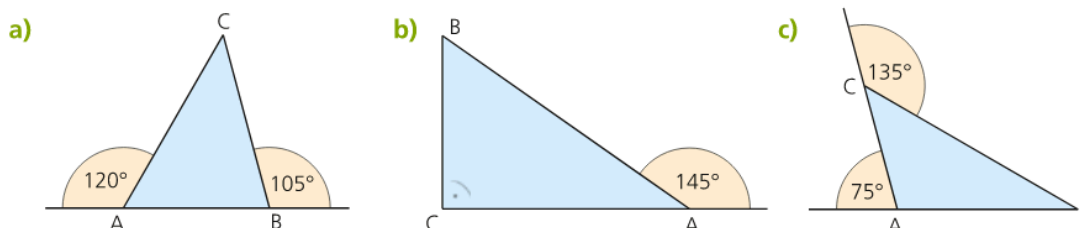
**716** Berechne die fehlenden Winkel in den Dreiecken:

H2/K1

	a)	b)	c)	d)	e)	f)	g)	h)	i)	j)
$\alpha$	$50^\circ$	$60^\circ$		$120^\circ$		$30^\circ$	$115^\circ$	$53^\circ$	$75^\circ$	
$\beta$	$72^\circ$	$60^\circ$	$45^\circ$	$38^\circ$	$25^\circ$	$60^\circ$			$75^\circ$	$65^\circ$
$\gamma$			$90^\circ$		$135^\circ$		$28^\circ$	$90^\circ$		$50^\circ$

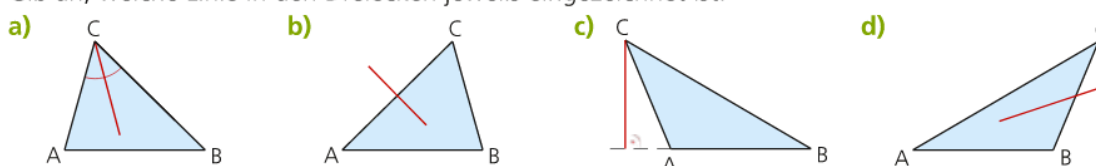
**724** Berechne alle Innenwinkel im Dreieck:

H2/K1



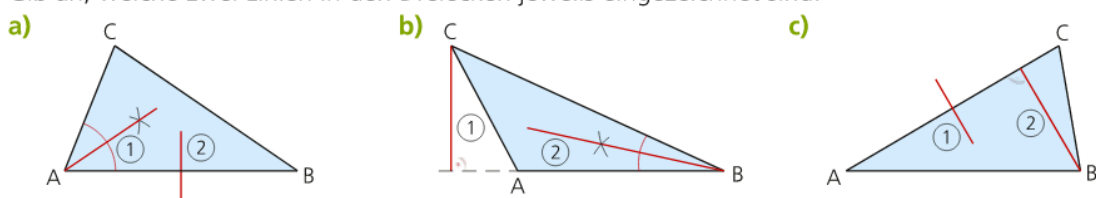
**798** Gib an, welche Linie in den Dreiecken jeweils eingezeichnet ist:

H3/K1



**799** Gib an, welche zwei Linien in den Dreiecken jeweils eingezeichnet sind:

H3/K1



## Arbeitsauftrag Musik:

Meine Lieben!

Wir nutzen die Zeit zu Hause um a) gute Musik zu hören und b) Lieder für unser Musical zu lernen und zu üben. Im Ordner findet ihr Noten (einige habt ihr ja schon, aber falls ihr sie nicht mit zu Hause habt) zu folgenden Liedern:

- 1) Mamma Mia
- 2) Dancing Queen
- 3) Honey, Honey
- 4) Super Trouper
- 5) The Winner Takes it all
- 6) Take a chance on me
- 7) I have a dream

Ich darf euch bitten die Texte von Mamma Mia, Dancing Queen und Honey Honey auswendig zu lernen. Viel Spaß dabei!

# The Winner Takes it all

Arr. By Kevin Zwinkels

Abba

1. I don't wan-na talk a - bout things we've gone trough  
 2. Arms thin-king i Be longed there  
 4. talk if it makes you feel sad

5  
 Am/E D(sus2)  
 though it's hur-ting me now it's his-to ry  
 I Fig-ured it made sense Buil-ding me a fense  
 and i un-der stand you've come to shake my hand

9  
 G  
 i've played all my Cards and that's what you've  
 buil-ding me a home thin-king i'd be  
 I a-po-lo-gise if it makes you

12 D(sus2)/F#  
 Am  
 Done too no-thing more to say  
 strong there but i was a fool  
 feel bad see-ing me so tense

15  
 D(sus2)  
 no more ace to play the win-ner takes it  
 Pla-ying by the rules The Gods may throw a  
 no self con-fi-dence the win-ner takes it

18 G B7 Em (but you see) E/G#  
 all the lo-ser's stand ing small be-side the vic-to-  
 dice their minds as cols as ice and some-one way down

22 Am D(sus4) 1.  
 ry that's her des-ti-ny i was in your  
 here lo-ses some-one dear

26 2. G

the win - ner takes it all

28 B<sup>7</sup> Em E/G<sup>#</sup> Am

the lo-ser's stand-ing small it's sim-ple and it's plain

32 D(sus4)

why should i com-plain 3.but tell me does she

35 G D/F<sup>#</sup>

kiss like i used to kiss you does is feel the

39 Am/E D(sus2)

same when she calls your name

42 G

some-where deep in-side you must know i

45 D(sus2)/F<sup>#</sup> Am/E

miss you but what can i say

48 D(sus2)

rules must be o-beyed the jud-ges will de-

51 G B<sup>7</sup> Em E/G<sup>#</sup>

cide the likes of me ab - ide Spec-tat - ors of the

55 Am D(sus4)

show Al-ways sta-ying Low The Game is on a -

59 G B<sup>7</sup> Em E/G<sup>#</sup> Am

gain A lo-ver or a friend a big thing or a small the win-ner takes it

65 D(sus4) **D.S. Al Coda** G B<sup>7</sup> Em

all i don't wan-na All and the loser has to fall

70 E/G<sup>#</sup> Am D(sus4)

The win-ner takes it all so the winner takes it

# Dancing Queen

Strong Rock

ABBA

34 D Em Am7 D7 C/G and when you get the chance, you are the dan - cing queen, —

38 C/G G D/G C/G G young and sweet, on - ly se - ven teen. — Dan - cing queen, —

42 C/G G D/F# C/E G/D D feel the beat from the tam - bou rine. — oh yeah. — You can dance, —

46 B7/D# Em A7/C# C you can jive, hav - ing the time of your life. — Oh, — see that girl, —

50 Am7 Am/D D7/A G C/G watch that scene, dig in the dan - cing queen. —

54 1. C/G G C/G G C/G C/G repeat and fade  
2. C/G G C/G G C/G C/G see that girl, —

57 2. C/G G C/G G C/G C/G Digin the dan - cing queen. —

63 Am7 Am/D D7/A G watch that scene, dig in the dan - cing queen. —

34 D Em Am7 D7 C/G and when you get the chance, you are the dan - cing queen, —

38 C/G G D/G C/G G young and sweet, on - ly se - ven teen. — Dan - cing queen, —

42 C/G G D/F# C/E G/D D feel the beat from the tam - bou rine. — oh yeah. — You can dance, —

46 B7/D# Em A7/C# C you can jive, hav - ing the time of your life. — Oh, — see that girl, —

50 Am7 Am/D D7/A G C/G watch that scene, dig in the dan - cing queen. —

54 1. C/G G C/G G C/G C/G repeat and fade  
2. C/G G C/G G C/G C/G see that girl, —

57 2. C/G G C/G G C/G C/G Digin the dan - cing queen. —

63 Am7 Am/D D7/A G watch that scene, dig in the dan - cing queen. —

# Super Trouper

ABBA  
LS: Franz Grauer

**Intro**

Su - per Trou - per beams are gon - na blind me but I won't feel blue  
like I al - ways do, 'cause some - where in the crowd there's you.

**A**

1. I was sick and tired of ev - ery - thing when I called you last night from Glas - gow.  
2. Fa - cing twen - ty thou - sand of your friends, how can a - ny - one be so lone - ly.

1. All I do is eat and sleep and sing, wish - ing ev - ery show was the last one.  
2. Part of a suc - cess that ne - ver ends, still I'm think - ing a - bout you on - ly.

1. So i - ma - gine I was glad to hear you're com - ing, sud - den - ly I feel al - right,  
2. There are mo - ments when I think I'm go - ing cra - zy, but it's gon - na be al - right,

**Refrain**

To - night the Su - per Trou - per lights are gon - na find me, shin - ing like the sun,  
To - night the Su - per Trou - per beams are gon - na blind me but I won't feel blue

smil - ing, hav - ing fun, feel - ing like a num - ber one.  
like I al - ways do, 'cause some - where in the crowd there's you.

**Bridge**

you So I'll be there when you ar - rive, the sight of  
you will prove to me I'm still a - live and when you take me in your arms and hold me  
tight I know it's gon - na mean so much to - night.

**Refrain**

I know it's gon - na mean so much to - night.

# Honey honey

ABBA  
LS: Franz Grauer

**Intro**

1. Ho - ney, ho - ney how you thrill me, a - ha, ho - ney, ho - ney.  
Ho - ney, ho - ney let me feel it, a - ha, ho - ney, ho - ney.  
2. Ho - ney, ho - ney touch me, ba - by, a - ha, ho - ney, ho - ney.

1. Ho - ney, ho - ney near - ly kill me, a - ha, ho - ney, ho - ney.  
Ho - ney, ho - ney don't con - ceal it, a - ha, ho - ney, ho - ney.  
2. Ho - ney, ho - ney hold me, ba - by, a - ha, ho - ney, ho - ney.

1. I'd heard a - bout you be - fore. I want - ed to know some more  
The way that you kiss good - night, the way that you hold me tight,  
2. You look like a mo - vie star but I know just who are,

1. and now I know what they mean, you're a love ma - chine. Oh, you make me diz - zy!  
I feel like I wan - na sing when you do your thing.  
2. and ho - ney to say the least, you're a dog - gone beast.

I don't wan - na hurt you, ba - by, I don't wan - na see you cry,  
so stand on the ground, girl, you bet - ter not get too high.

But I'm gon - na stick to you, boy you'll nev - er get rid of me.  
There's no o - ther place in this world where I ra - ther would be



# Take a chance on me

1. Stimme

Mamma Mia

The musical score is written for a single voice part in the key of D major (indicated by two sharps) and 4/4 time. It consists of eight staves of music, each with a corresponding line of lyrics. The lyrics are: "If you change your mind, I'm the first in line. Honey I'm still free, take a chance on me. If you need me, let me know? Gon-na be a - round. If you've got no place to go if you're feeling down. If you're all a - lone when the pret - ty birds have flown, hon-ey, I'm still free, take a chance on me. Gon-na do my ve - ry best and it ain't no lie. If you put me to the test, if you let me try. Take a chance on me." The score includes various musical notations such as treble clefs, key signatures, time signatures, and dynamic markings like 'B' (forte) and 'F#' (f#). The lyrics are written below the notes, with some words hyphenated across lines.

If you change your mind \_\_\_\_\_ I'm the first in line.

3 \_\_\_\_\_ Honey I'm still free, \_\_\_\_\_ take a chance on me. \_\_\_\_\_

5 \_\_\_\_\_ F# If you need me, let \_\_\_\_\_ me know? Gon-na be a - round.

7 \_\_\_\_\_ B If you've got no place \_\_\_\_\_ to go if you're feeling down. \_\_\_\_\_

10 If you're all a - lone \_\_\_\_\_ when the pret - ty birds

12 \_\_\_\_\_ have flown, hon-ey, I'm still free, \_\_\_\_\_ take a chance on me. \_\_\_\_\_

14 \_\_\_\_\_ F# Gon-na do my ve - ry best and it ain't no lie. \_\_\_\_\_ If you put me to

17 \_\_\_\_\_ B C#m the test, if you let me try. \_\_\_\_\_ Take a chance on me, \_\_\_\_\_

20 F#

23 C#m

25 B

27 C#m

29 B

31 E

33 G#m

35 E

38 C#m

41 F#

43 B

46 F#

49 F#

51 B

54 C#m

57 F#