

# SUPPORT FILES



## Results & Answers for the Hanks Near-Point Eye Charts

This paper lists the answers to questions on the *Hanks Near-Point Eye Charts\**, as well as discussing the interpretation of some of the results obtained.

### VISUAL ACUITY RESULTS

Near visual acuity is shown in several different notations. To convert between these notations we recommend the online download:

Hanks\_Table\_1\_NVA.pdf

N Size	Snellen 40 cm	Snellen 6 Eq	Snellen 20 Eq	Jaeger	Decimal	Font Size	LogMAR
N 84	40/600	6/90	20/300		0.07	86 pt	1.18
N 56	40/400	6/60	20/200		0.10	56 pt	1.00
N 50	40/360	6/54	20/180		0.11	50 pt	0.95
N 45	40/320	6/48	20/160		0.12	45 pt	0.90
N 42	40/300	6/45	20/150		0.13	42 pt	0.88
N 34	40/240	6/36	20/120		0.17	34 pt	0.78
N 28	40/200	6/30	20/100	J 16	0.20	28 pt	0.70
N 25	40/160	6/24	20/80	J 14	0.22	25 pt	0.65
N 22	40/180	6/27	20/90	J 13	0.25	22 pt	0.60
N 19	40/133	6/20	20/67	J 12	0.30	19 pt	0.52
N 17	40/120	6/18	20/60	J 11	0.33	17 pt	0.48
N 14	40/100	6/15	20/50	J 10	0.40	14 pt	0.40
N 11	40/90	6/12	20/40	J 8	0.50	11 pt	0.30
N 10	40/70	6/11	20/35	J 7	0.57	10 pt	0.24
N 9	40/60	6/9	20/30	J 6	0.67	9 pt	0.18
N 8	40/50	6/7.5	20/25	J 5	0.80	8 pt	0.10
N 6	40/40	6/6	20/20	J 3	1.00	6 pt	0.00
N 5	40/30	6/4.5	20/15	J 2	1.33	5 pt	-0.12
N 4	40/25	6/4	20/13	J 1	1.60	4 pt	-0.20
6/3	40/20	6/3	20/10	J 1+	2.00	3 pt	-0.30

#### Notes:

1. Jaeger is a historic system (1867) that is now not recommended. Jaeger is not standardized and the variability of the actual size of test letters on different Jaeger cards currently in use is very high. Therefore, test results with different Jaeger cards are not comparable.
2. LogMAR is the Logarithmic Minimum Angle of Resolution (Bailey-Lovie). This is used in vision research and calculated as follows:

$$\text{LogMAR} = \text{Log}_{10}(1 / \text{Decimal VA})$$

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### INDICATED MAGNIFICATION

To aid clinicians assessing Low Vision patients, the indicated magnification is shown alongside the larger text samples on the chart for Adults. This is the magnification that is indicated for initial clinical assessment.

For example, if a patient's best corrected near vision is only N14, a low vision aid with magnification of 2X is indicated for the initial assessment.

2.0X

### CHILDREN'S READING AGE

The indicated reading age is shown on the chart for Children. This age is expressed in years.

For example, if a child is able to read the N12 sample without more than 2 errors, they are assessed as having an indicated reading age of 7 to 9 years.

7-9RA

### CHILDREN'S TEXTBOOK

The sample task labelled "Textbook" includes mathematics exercises.

1. a)  $x = 12$   
b)  $x = 6$   
c)  $x = 9$   
d)  $x = 10$   
e)  $x = 59$
2. a)  $10y + 25$   
b)  $-12a + 15b - 3c$   
c)  $-6y^2 - 8y - 6$   
d)  $-2a + 8b - 1$   
e)  $10x + 9y + 20z$

### USABLE CORRIDOR WIDTH SCALE

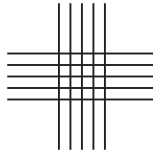
This scale is used for measuring the usable horizontal field of view with progressive spectacle lenses; either monocularly or binocularly.

This is useful when troubleshooting adaptation problems. For full details of *How to Use the Usable Corridor Width Scale* see the support file download:

Hanks Support S\_106.pdf

## CROSS CYL

This chart is used with a cross-cyl lens - for example +0.25/-0.50 at axis x90 or x180 - with the aim of adjusting the add power so that the horizontal or vertical lines are equal for “blackest & clearest”. This is achieved when one set of lines is in front of the retina and the other set is behind; and both are of equal distance:



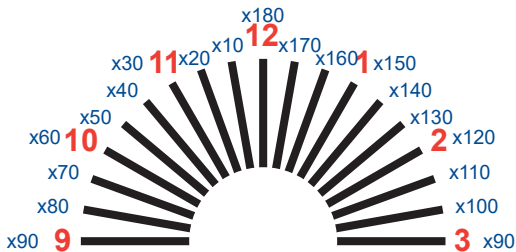
## ASTIGMATIC FAN

The red numbers on this *Astigmatism Clock Chart* are designed for the patient, rather than for the clinician. They do NOT indicate the axis directly - for example 11 on this chart does not indicate an axis of 110.

The priority in the design of this chart is that they instead provide a familiar clock-face reference for patients.

“Using the red clock numbers to name them, which lines look the clearest, blackest and most distinct?”.

When the patient is correctly fogged with plus lenses (*best sphere plus half the estimated cyl*) the power in the correcting minus cylinder needs to be along the clearest line. This means that the axis of the correcting minus cylinder is perpendicular (at right angles) to the clearest line.



The practitioner is then able to use this subjective answer to determine the indicated minus cyl axis of astigmatism correction.

Hour Line	Rx -Cyl *
1	x150
2	x120
3	x90
9	x90
10	x60
11	x30
12	x180

★ Axis for the correcting [Minus Cyl](#)

## LETTER GRID & FIND A WORD

This is a useful grid of letters that are all the *Normal Vision* size of N6 or 40/40. Patients can be instructed to read lines horizontal or vertical as clinical assessments continue. By varying the instruction there will be no opportunity for the letters to be memorised.

G Z E C R H S D  
 B C Z H O D C Z  
 E K S Z V D R H  
 N C O D E R A V  
 D S H O R E V A  
 G H Z C K S E N  
 D E C K H S N O  
 V S K Z R O D E

As well as this clinical use there is also a *Find a Word* challenge to maintain a longer near vision task. There are 11 hidden words of 3 letters or more . .

- ~ Bend
- ~ Code
- ~ Crave
- ~ Deck
- ~ Dock
- ~ Dress
- ~ Rode
- ~ Rover
- ~ She
- ~ Shore
- ~ Van

## DUOCHROME

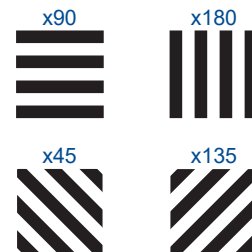
This traditional test is used as indication of plus or minus adjustments to the near addition. When green is “blacker and clearer” more plus is indicated, while red indicates less.



## ASTIGMATIC BLOCKS

The *Astigmatic Blocks* are essentially a simplified representation of the 90°, 180°, 45° and 135° lines from the *Astigmatic Fan Chart*.

When the patient is again fogged, the blocks are used to give an indication of the general quadrant for the cylinder axis.






Blocks	Rx -Cyl *
Top Left (H)	x90
Top Right (V)	x180
Bottom Left	x45
Bottom Right	x135

★ Axis for the correcting [Minus Cyl](#)

## SUPPRESSION

The suppression test is done with the patient wearing Cyan/Red anaglyph spectacles or clip-ons; with the cyan lens in front of the right eye.



Binocular	R Suppression	L Suppression
		
3	2	2

## CONVERGENCE

The convergence target is used as a fixation point and for the measurement of the patient's *Amplitude of Convergence*. Instruct the patient to "Move the chart closer while keeping this target single". The near point of convergence (NPC) is the closest point remaining single - typically around 10cm.



The same target can also be used to measure the Amplitude of Accommodation. Instruct the patient to "Move the chart closer while keeping the targets clear". The near point of accommodation (NPA) is the closest point remaining clear - this varies by age and remaining focussing ability.

*\*Australian Therapeutic Goods Administration; registered as a Medical Device (Class 1) - ARTG 164851.*