

MiSP Human Growth and Development Assessment L3

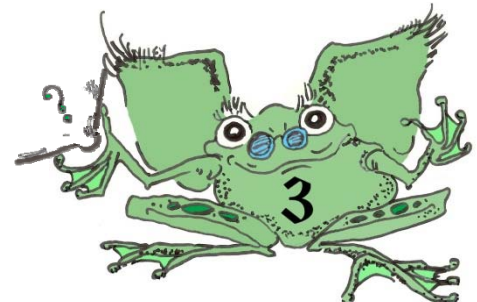
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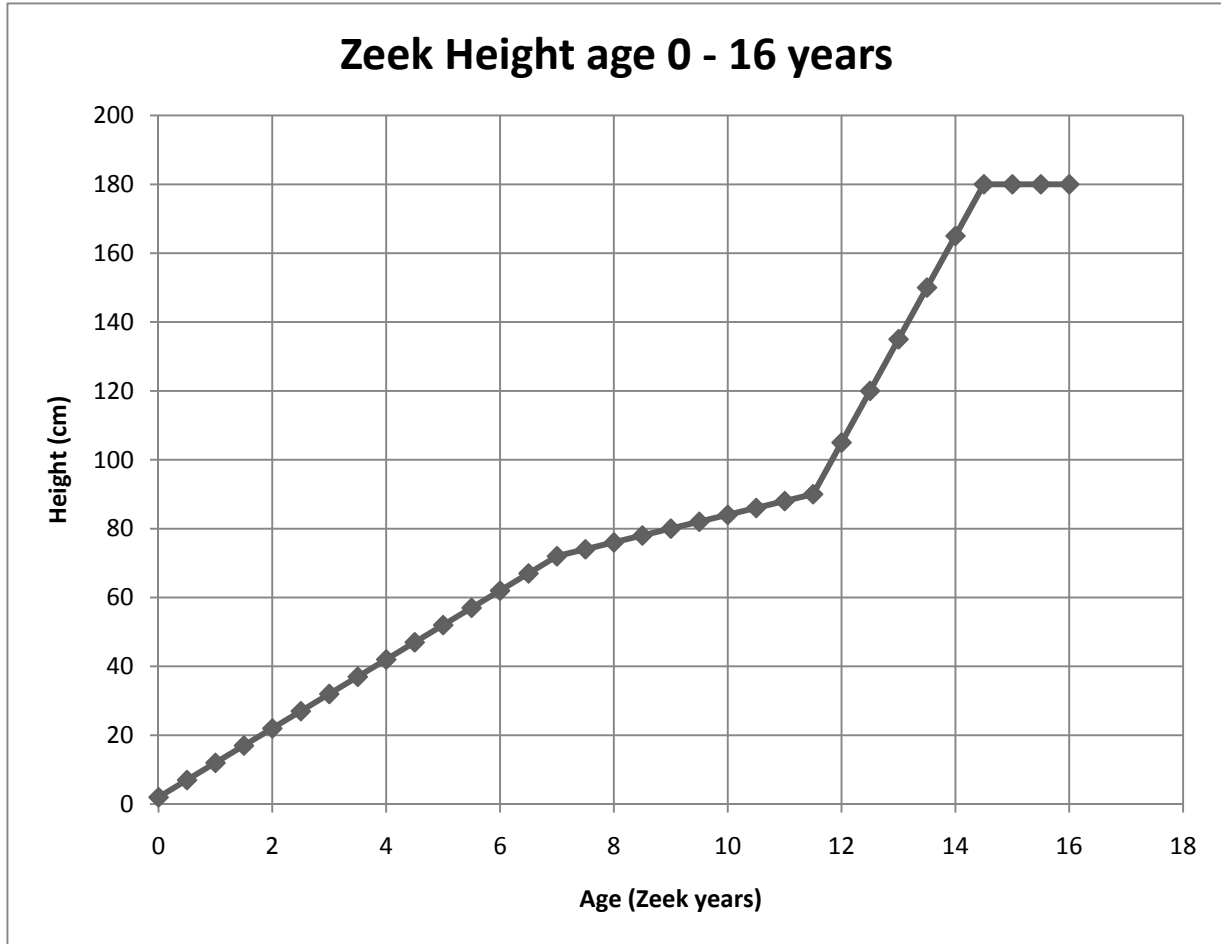
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On the planet Zircus, the Zeeks are a bionic humanoid species with very predictable growth and development. All Zeeks come out of the reproduction factory with the same height: 2.0 cm. They proceed to grow, following the same predictable pattern, until they reach a height of 180 cm at age 14.5 Zircus years. They remain 180 cm for the rest of their adult life.

The stereotyped growth pattern is shown on the chart below and the graph on the next page.

Age (Zircus years)	Height (cm)	Age (Zircus years)	Height (cm)
0	2.0	8.0	76.0
.5	7.0	8.5	78.0
1.0	12.0	9.0	80.0
1.5	17.0	9.5	82.0
2.0	22.0	10.0	84.0
2.5	27.0	10.5	86.0
3.0	32.0	11.0	88.0
3.5	37.0	11.5	90.0
4.0	42.0	12.0	105.0
4.5	47.0	12.5	120.0
5.0	52.0	13.0	135.0
5.5	57.0	13.5	150.0
6.0	62.0	14.0	165.0
6.5	67.0	14.5	180.0
7.0	72.0	15.0	180.0
7.5	74.0	15.5	180.0
		16.0	180.0



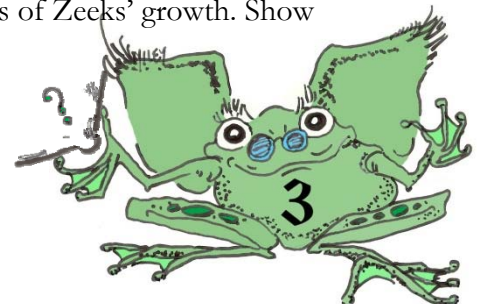


1. The Zeeks grow from “birth” to age 14.5 years. The increase in size is not the same during the full 14.5 years. How many intervals with different growth rates (# cm / half year) occur in the Zeeks between 0 and 14.5 years? _____

2. During which age range is the rate of growth the greatest? _____

3. Use the graph to estimate the height (in cm) of a Zeek who is:
 - a. age 12 $\frac{1}{4}$ (12.25) _____
 - b. age 22.0 _____

4. Calculate the unit rate of change (slope) during the specified periods of Zeeks’ growth. Show equation, substitutions, and answer.



a. 0 to 7 years

b. 7 to 11.5 years

5. Put the unit rate of change (slope) into words for each of the lines above in 4:

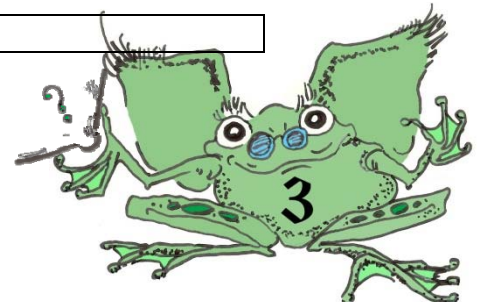
a. From 0 to 7 years of age, the Zeeks grow _____ per _____.

b. From 7 to 11.5 years of age, the Zeeks grow _____ per _____.

6. Is the unit rate of change (slope) for the line from 11.5 years to 14.5 years less than or more than the slope from 7 to 11.5 years? Explain your answer.

7. Use the slope, the equation for a line, and an appropriate ordered pair to calculate the y -intercept for the line from 0 to 7 years.

Y-Intercept for the growth line from 0 to 7 years



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8. Using the y -intercept from #7 and the unit rate of change (slope) from #4, what is the formula for the line from 0 to 7 years?

Equation for the growth line from 0 to 7 years

9. Use the formula in #8 to calculate the height of Zeeks at age 4.1 years.

Equation for the growth line from 0 to 7 years:	
Substitutions:	Height at 4.1 years =

10. If you used the formula from #8 to calculate the height of a Zeek at age 9.1, your calculation would be inaccurate. Would your calculation give a height that was too short or too tall? Explain your answer.

