Karyotyping activity worksheet answers

This exercise is designed as an introduction to genetic studies in humans. Karyotyping is one of many techniques that allow us to search for several thousand possible genetic diseases in humans. You evaluate the case history of 3 patients, complete their karyotypes and diagnose missing or extra chromosomes. Then you will conduct research on the Internet to find websites that cover some aspects of human genetics. If this is a task for a class, you should turn in a total of 7 answers on paper (2 for each patient, 1 for internet search). Congratulations! You have successfully completed the karyotype of patient A. Further interpret the karyotype and make a diagnosis. The completed patient A karyotype is at the bottom of the reference page. On a separate piece of paper, answer the following 2 questions. Laboratory technicians compile karyotypes and then use a specific notation to characterize the karyotype. This entry includes the total number of chromosomes, sex chromosomes and any other or missing autosomal chromosomes. For example, 47, XY, +18 means that the patient has 47 chromosomes, is male, and has another autosomal chromosome 18. 46, XX is a woman with a normal number of chromosomes. 47, XXY is a patient with an extra sex chromosome. And 1. What notation would you use to characterize patient A's caryotype? The next step is to either diagnose or exclude a chromosomal abnormality. In a patient with a normal number of chromosomes, each pair will have only two chromosomes. Having an extra or missing chromosome usually renders the fetus unlifeable. In cases where the fetus makes it a term, there are unique clinical features depending on which chromosome is affected. Below are some syndromes caused by an abnormal number of chromosomes. And 2. What diagnosis would you give Patient A? DiagnosisChromosomal abnormality Normal # chromosome problemspatidies are caused by something other than an abnormal number of chromosomes. Klinefelter syndrome or more extra sex chromosomes (i.e. XXY) Down syndromeTrisomy 21, extra chromosome 21 Trisomes 13 Syndromeextra chromosome 13 Name_____ In this activity you will use a computer model to look at chromosomes and prepare a caryotype. You will diagnose patients for abnormalities and learn the correct notation for the characterization of karyotypes. Site 1: www.biology.arizona.edu Click on Karyotyping under Human Biology and read the homepage: 1. What causes the dark belt on the chromosome? _____ 2. What is centrome?

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patient (Click on the link to complete patient Karyotype) * Match chromosome on his homolog. After completing all the matches, you will analyze (Scroll down to see the finished karyotype). 3. Co je historie pacienta A (shrnout) _____ Kolik celkových chromozomů je ve vašem karyotypu - počítat je _____ Poslední sada chromozomů je pohlavní chromozomy, pokud máte dva velké chromozomy, váš pacient je XX (samice), jeden velký a jeden malý označuje a XY (muž) . What sex chromosomes does your patient have _____ Which chromosome set has extra + _____ 5. What diagnosis would you give this patient (what disease)? _____ Patient B - click on the link to go to Patient B and repeat the above process. 6, 2015, in New What is patient history B (summarize)

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chromosomes are in your karyotype - count them _____ What sex chromosomes your patient has _____ Which chromosome set has extra + _____ 8. Complete the writing of this patient's caryotype: 47 X _____ 9. What's the diagnosis? _____ Pacient C - click on the link for patient C and repeat the above process. 10. What is patient C's medical history (summarize)? _____ 11. How many total chromosomes are in your karyotype - count them _____ What sex chromosomes your patient has _____ Which chromosome set has extra + _____ 12. Write the correct entry for this karyotype. _____ 13. What's the diagnosis? _____ Site 2: Genetic Science Learning Center ( ) Go to inheritance and features --> How scientists read chromosomes (Find answers to the following questions in this field. See all sections) 1. What are the three key properties used to read chromosomes? _____ _____ _____ 2. Sketch or description: metacentric, submetacentric, acrocentric 3. I need to do a karyotype - Try it yourself - Create your own karyotype - turning on the advice is fine. Tick this box when your karyotype is completed What have you found difficult about matching chromosomes? _____ 4. Go to -Using Karyotypes to predict genetic disorders What is trisomy?

_____ _____ 5. For each of the disorders, describe the chromosome abnormality and symptoms. (Enter each in the search box on the Cri Du Chat Turner Syndrome Klinefelter Syndrome Williams Syndrome Extra Credit - bio/karyotypes.htm Pick from the list of abnormal karyotypes and arrange chromosomes in the karyotype. Use the Print screen button to copy the finished karyotype to the word processing document. For diagnosis, write a chromosome set has abnormalities, and what type of abnormality it is. Print this page and turn it around. 10th, 11th, 12th, Higher Education, Adult Education, Homeschool, StaffPage 28th, 9th, 10th, 11th, 12th, Higher Education, Adult Education, Homeschool, StaffPage 36th, 7th, 8th, 9th, 11th, 11thPage 47th, 8th, 9th, 10th, 10th , 11th, 12th, Higher Education, HomeschoolPage 57th, 8th, 9th, 10th, 11th, 12th, Higher Education, Adult Education, HomeschoolPage 6This Fluency Builder contains diagrams, definitions and images of mitosis and meiosis vocabulary, including : Mitosis, Meiosis, Female, Male, Somatic, Gamety, Diploid, Crossing Over, Autosome, Karyotype, Zygote, 47, and 23. Fluency Builders are fun, fast, and most importantly, motivate stuPage 76., 7th, 8th, 9th, 11th, 12th, HomeschoolPage 84th, 5th, 6th, 7th, 8th, 9th, 10th, HomeschoolPage 93rd, 4rd, 5th, 6th, 7th, 8rd, 9th, 9th 10th, HomeschoolPage 104th, 7th, 8th, 9th, 10th, 11th, 12th, HomeschoolPage 116th, 7th, 8th, 9th 10th, 11th, 12th, HomeschoolPage 126th, 7th, 8th, 9th, 10th, 11th, 12th, HomeschoolPage 135th , 6th , 7th, 8th, 9th, 10th, 11th, 12th, HomeschoolPage 143rd, 4rd, 5th, 6th, 7th, 8th, 9th, Homeschool Homeschool Homeschool