

I. The following word problems are arithmetic sequences or arithmetic series. Show work!!!

- 1.) Sally interviewed for a job that promised her a starting salary of \$32,000 with a \$1,250 raise at the end of the year. What will her salary be during her sixth year if she accepts the job?
- 2.) Dr. Harris opened an English Language School Berlin. He began with 26 students and enrolls 3 new students per week. In how many weeks will he have 101 students?
- 3.) An auditorium has 28 seats in the third row and 88 seats in the eighteenth row. How many seats are in the eleventh row?
- 4.) Logs are stacked in a pile with 24 logs on the bottom row and 15 on the top row. There are 10 rows in all with each row having one more log than the one above it. How many logs are in the stack?
- 5.) Suppose that you play black jack at Harrah's on June 1 and lose \$1,000. Tomorrow you bet and lose more money and keep going back to the casino each day in June. On the last of June, you determined that you lost \$565. How much did you lose each day in June?
- 6.) After knee surgery, your trainer tells you to return to your jogging program slowly. He suggests jogging for 12 minutes each day for the first week, 18 minutes each day for the second week, and so on. How many weeks will it be before you are up to jogging for 2 ½ hours per day?
- 7.) A health club rolls its towels and stacks them in layers on a shelf. Each layer of towels has one less towel than the layer below it. If there are 20 towels on the bottom layer and one towel on the top layer, how many towels are stacked on the shelf?
- 8.) On the Moon, a falling object falls 23.85 feet in the fifth second and falls 66.25 feet in the thirteenth second. How far does an object fall in the first second?
- 9.) A basketball team has a halftime promotion where a fan gets to shoot a 3-pointer to try to win a jackpot. The jackpot increases by \$500 each time there is no winner. Bill has tickets to the fifteenth game of the season in which if someone wins, they will get \$12,000. What the amount of the jackpot at the start of the season?
- 10.) Jamila is making a triangular wall with building blocks. The top row has one block, the second row has three blocks, the third row has five, and so on. How many rows can she make with a set of 100 blocks?
- 11.) You are considering two job offers. Company A will start you at \$19,000 a year and guarantee you a raise of \$2600 per year. Company B will start you at a higher salary of \$27,000 a year, but will only guarantee a raise of \$1200 per year. Which company pays the greater total salary over a ten year period?
- 12.) Each hour, a grandfather clock chimes the number of times that corresponds to the time of day. For example, at 3:00, it will chime 3 times. How many times does the clock chime in a day (Remember – there are 24 hours in a day)?
- 13.) A construction company will be fined each day it is late completing its current project. The daily fine will be \$4000 for the first day and will increase by \$1000 each day. Based on its budget, the company can only afford \$60,000 in total fines. What is the maximum number of days it can be late?
- 14.) Along the San Andreas Fault in California, the plates of the earth are moving over time. A section of the Pacific plate is moving northwest at a rate of about 1.3 centimeters per year. About how far will the plate move in 100 years?
- 15.) Maggie Alger sells houses in a new development. She makes a commission of \$3,750 on the sale of her first house. Ms. Alger ends up selling 10 houses for the year. What was Ms. Alger's commission on her last house if her total commission for the year was \$60,000?