### Lesson 26 Practice Problems

1. Kiran plans to save $200 per year. Bank A would pay 6% interest, and Bank B would pay 4% interest (both compounded annually). How many years will it take to save $10,000 if he uses Bank A? Bank B?
2. Find the sum of the first 20 terms of each sequence:
	1. $1,\frac{2}{3},\frac{4}{9},\frac{8}{27},\frac{16}{81},…$
	2. $3,\frac{6}{3},\frac{12}{9},\frac{24}{27},\frac{48}{81},…$
	3. $4,2,1,\frac{1}{2},\frac{1}{4},…$
3. Diego wonders how much money he could save over 25 years if he puts $150 a year into an account with 4% interest per year compounded annually. He calculates the following, but thinks he must have something wrong, since he ended up with a very small amount of money:
* $total amount=150\frac{1−0.04^{25}}{0.96}=156.25$
* What did Diego forget in his calculation? How much should his total amount be? Explain or show your reasoning.
1. Which one of these equations is equivalent to $8=\frac{3+2x}{4+x}$ for $x\ne -4$?
	1. $8⋅\left(4+x\right)=3+2x$
	2. $8⋅\left(3+2x\right)=4+x$
	3. $8−\left(4+x\right)=3+2x$
	4. $\frac{4+x}{8}=3+2x$
* (From Unit 2, Lesson 23.)
1. Is $a^{3}+b^{3}=\left(a+b\right)\left(a^{2}−ab+b^{2}\right)$ an identity? Explain or show your reasoning.
* (From Unit 2, Lesson 24.)
1. Is $a^{4}+b^{4}=\left(a+b\right)\left(a^{3}−a^{2}b−ab^{2}+b^{3}\right)$ an identity? Explain or show your reasoning.
* (From Unit 2, Lesson 24.)
1. The formula for the sum $s$ of the first $n$ terms in a geometric sequence is given by $s=a\left(\frac{1−r^{n}}{1−r}\right)$, where $a$ is the initial value and $r$ is the common ratio.
* A medicine is prescribed for a patient to take 700 mg every 12 hours for 5 days. After 12 hours, 4% of the medicine is still in the body. How much of the medicine is in the body after the last dose?
* (From Unit 2, Lesson 25.)



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