STUMPERS 14

① One of the PEA interscholastic teams has started its season badly, winning 1 game, losing 6, and tying none. The team will play a total of 25 games this season.
(a) What percentage of the seven games played so far have been wins?
(b) Starting with its current record of 1 win and 6 losses, what will the cumulative winning percentage be if the team wins the next 4 games in a row?
(c) Starting with its current record of 1 win and 6 losses, how many games in a row must the team win in order for its cumulative winning percentage to reach at least 60%?
(d) Suppose that the team wins ten of its remaining 18 games. What is its final winning percentage?
(e) How many of the remaining 18 games does the team need to win so that its final winning percentage is at least 60%? Is it possible for the team to have a final winning percentage of 80%? Explain.

② .Graph on a number line the intervals described below:
(a) All numbers that are greater than 1 or less than −3.
(b) All numbers that are greater than −5 and less than or equal to 4.
(c) All numbers whose squares are greater than or equal to 1.

③ .Use inequality notation to represent the intervals described below.
(a) All numbers that are greater than 1 or less than −3.
(b) All numbers that are greater than −5 and less than or equal to 4.
(c) All numbers whose squares are greater than or equal to 1.

④ Randy and Sandy have a total of 20 books between them. After Sandy loses three by leaving them on the bus, and some birthday gifts double Randy's collection, their total increases to 30 books. How many books did each have before these changes?

⑤ Combine the following fractions into a single fraction. Express each of your answers in lowest terms.
(a) $\frac{27}{5} + \frac{3y}{4}$ (b) $\frac{4m}{5} - \frac{2}{3}$ (c) $2 + \frac{x}{3}$ (d) $\frac{x}{2} + \frac{2x}{3} - \frac{3x}{4}$

⑥ .Solve the following for x:
(a) $4 - (x + 3) = 8 - 5(2x - 3)$ (b) $x - 2(3 - x) = 2x + 3(1 - x)$

⑦ ..Owl can clean Piglet's house in 25 minutes. Eeyore can clean Piglet's house in 40 minutes. How long will it take Owl and Eeyore to do the job if they work together?

⑧ Last year, three fifths of the Outing Club were girls, but this year the number of boys doubled and six new girls joined. There are now as many boys in the club as there are girls. How many members did the club have last year?

⑨ I am thinking of n consecutive positive integers, the smallest of which is m. What formula represents the largest of these integers?