

## Alien Math Advanced

On the faraway Planet Forg lives an advanced civilization of green sentient beings with two hands and seven fingers on each hand. Interestingly, their numbering system is in base thirteen instead of the base-ten system used on Planet Earth.

“Why not fourteen?” asks Arthur, a space explorer visiting Planet Forg.

“A prime base is better, so we picked the next prime down,” says Gersh, a famous Forgian mathematician.

“I suppose humans should have used nine instead,” says Arthur.

“I always thought something was fundamentally wrong with Earthlings,” laughs Gersh.

“In your number system, what do you get when you multiply  $27_{\text{BaseThirteen}} \times 34_{\text{BaseThirteen}}$  ?” asks Arthur.

What does Gersh answer?

When you have solved this problem, go to Room 2057 to present your solution to the Master Teacher.