

1. Write down their number and we'll compare them all at the end.
2. 180.
3. (a) Write 2 using three 5s and +,-,\*,/. E.g.  $(5 + 5)/5$ .  
(b) Write 4 using three 5s.  
(c) Write 5 using three 5s.
4. Write 25 using seven 2s. Do NOT let them use "22."
5. The table should read: 6 5 4 6 5 4 6 5 4 6 5 4 6
6. 162.
7. At least two team members sing a song with mathematical content.
8. 6.
9. They should show you the two identical pieces. Take them when they're done.
10. (ONE TRY ONLY!) \$1.25 per pound
11. Answer: Impossible. They must explain why! The best explanation is to observe that when the circuit visits a corner it must go through two diagonally adjacent center squares, and then the only way it can visit the other corner is if it does so immediately before or after going to one of those center squares—but then you can't get out of that corner.
12. Saturday and Sunday. (both required)
13. 57/64.
14. They should show you the L shape and then the square with a square hole inside.
15. (ONE TRY ONLY!) The path is a straight line to the MIDPOINT of one of the edges, and from there to the X. (Never go to the corner in between the 2 corners!)
16. 44 (others may be possible—all digits must be 4,8, or 9, then check other conditions)
17.  $-3\ 4\ -1 / 2\ 0\ -2 / 1\ -4\ 3$ , or rotations/reflections of this.
18.  $1/2 + 1/3 + 1/12 + 1/156$ . Others possible, verify if necessary.
19. 0 horses, 20 pigs, 80 rabbits; and 5 horses, 1 pig, 94 rabbits. (BOTH REQUIRED)
20. A team member should trace the envelope without lifting the pencil or retracing any lines.
21.  $35/12$  hours =  $2\ 11/12$  hours = 2 hr. 55 min.
22. 31.
23. A:  $5/12$ , B:  $1/4$ , C:  $1/4$ , D:  $1/12$
24. 854.
25. (ONE TRY ONLY) Bronze chest.
26. 60 mph.
27. 13.5 hours.
28. 28.
29. 89.
30. They should show you the two identical pieces.