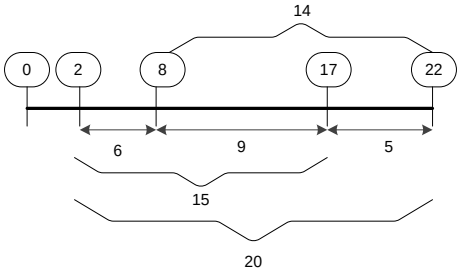
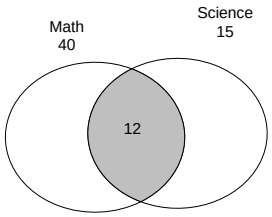
Answer Key

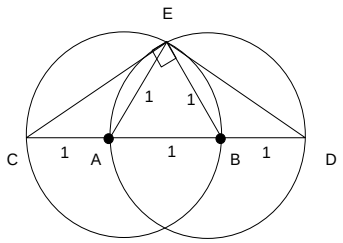
1. 5 of them
   2, 3, 4, 5, 6
2. $1 - \frac{3}{4} = \frac{1}{4}$
   $4 \div \frac{1}{4} = 16$
3. $(1\frac{1}{4} + \frac{5}{6} + 2\frac{5}{12} + \frac{1}{2}) \times 3$
   $= (3 + \frac{3+10+5+6}{12}) \times 3$
   = \$15
4. $20 \div 4 = 5$
   $5 + 1 = 6$
   $6 \times 6 = 36$
   $36 \times 2 = 72$
   $72 - 20 = 52$
5. 14

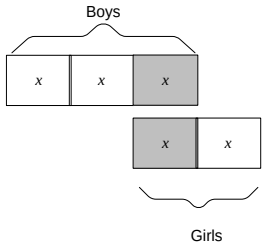


6. $5 \times 10 = 50$
   $50 - 29 = 21$
   $21 \div (5 + 2) = 3$ (incorrect answers)
   $10 - 3 = 7$ (correct answers)
7. $15 \times 0.8 = 12$
   $12 \div 0.3 = 40$ (Math)
   $40 + 15 - 12 = 43$



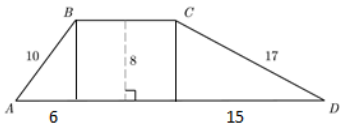
8. 12
9. 23
10. 12:18 = x:12
    $x = 8$
11. A
12. $\frac{3}{2} \times \frac{4}{3} \times \frac{5}{4} \cdots \times \frac{2006}{2005} = 1003$
13. $\angle AED = \angle BEC = 90°$
    ΔAEB is an equilateral.
    $\angle BED = 30°$
    $\angle CED = 90 + 30 = 120$





14. $5x = 20$
    $x = 4$
    $3x = 12$
15. Method I)
    $7 \times 2 = 14$
    $2 \times 5 = 10$
    $5 \times 7 = 35$
    $2 \times 5 \times 7 = 70$

    Method II)
    Multiply the three equations:
    $① \times ② \times ③ = (xyz)^2 = 4900$
    So, $xyz = 70$
16. $1985 + 6 = 1991$
    $1991 - 12 = 1979$
17. $\frac{1}{2} \times 8 \times (6 + 15) = 84$
    $164 - 84 = 80$
    $80 = 8 \times 10$
    Ans = 10



18. A
19. A:R = 12:8 = 3:2
    $60¢ \times \frac{2}{3} = 40¢$
20. A:T = 12:6 = 2:1
    $12 \times 2 = 24$
21. E

22. 9 – 1 = 8 cutting marks
6 – 1 = 5 cutting marks
$\frac{3}{9}=\frac{2}{6}$
$\frac{6}{9}=\frac{4}{6}$
8 + 5 – 2 = 11
Ans = 12 pieces

23. $\frac{1}{2}(60) = 30$

24. Consider 6 pears and 6 oranges.
$\frac{16}{16+24}=\frac{16}{40}=$ 40%

25. Assume there are 24 students in the school, 12 boys and 12 girls.
$\frac{3}{4}\times12 = 9$ (girls)
$\frac{2}{3}\times12 = 8$ (boys)
$\frac{9}{9+8} = \frac{9}{17} = 8/17$

26. Reverse the order:
$$\begin{array}{r} CD \\ \times ABA \\ \hline CDCD \end{array}$$
A must be 1.
B must be 0.
Namely, ABA = 101.
A + B = 1

27. Let x, y, and z be the number of correct, incorrect and omissions.
Score = $4x - y = 77$
There is only one solution:
$x = 20$, $y = 3$, and $z = 2$.
Ans = 20

28. 162

29. Med(106,5,5,6,8) = 6
Ave(106,5,5,6,8) = 26
26 – 6 = 20

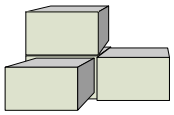
30. There 50 even numbers from 2 to 100.
There are 25 pairs:
(100, 98), (96, 94), …(4, 2)
Each pair has a difference of 2.
25×2 = 50

31. B = 21
C = 21 = 5 = 16

32. A total of 3×3×2 = 18 of them.
1023, 1032, 1203, 1230, 1302, 1320,
2013, 2031, 2103, 2130, 2301, 2310,
3012, 3021, 3102, 3120, 3201, 3210
2013 – 1320 = 693
2310 – 3012 = 702

33. $\frac{1}{4}(6.1+8.2+9.7) = 6$
$6^2 = 36$

34. 4



35. 1 – ⅓ – ½ = $\frac{1}{6}$ = 1/6

36. To be a multiple of 11, 6 + 6 – A = 11-multiple.
6+6 – 1 = 11
A = 1

37. $4x = \frac{1}{x}$
$4x^2 = 1$
x = ½ = 1/2

38. 108×2 = 216
15×15 = 225
15 pans are needed.
15×2 = 30 eggs
30÷6 = 5 half-dozen

39. 15×3 = 45 (tablespoons)
8×6 = 48
And = 6 sticks enough.

40. $108\times2\times\frac{3}{4} = 162$
15×11 = 165
Ans = 11 pans (recipes) enough.