Stage 8 Autumn term 2 – Maths challenge task

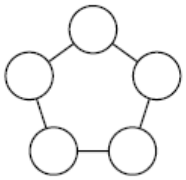
11. Which of the following statements is false?

A 12 is a multiple of 2 B 123 is a multiple of 3 C 1234 is a multiple of 4
D 12 345 is a multiple of 5 E 123 456 is a multiple of 6

12. The musical *Rent* contains a song that starts 'Five hundred and twenty five thousand six hundred minutes'.
Which of the following is closest to this length of time?

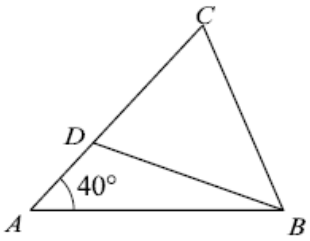
A a week B a year C a decade D a century E a millennium

13. The diagram shows five circles placed at the corners of a pentagon.
The numbers 1, 2, 3, 4, 5 are placed in the circles shown, one in each, so that the numbers in adjacent circles always differ by more than 1.
What is the sum of the numbers in the two circles adjacent to the circle which contains the number 5?



A 3 B 4 C 5 D 6 E 7

14. In the diagram, $AB = AC$ and D is a point on AC such that $BD = BC$.
Angle BAC is 40°.
What is angle ABD?



A 15° B 20° C 25° D 30° E 35°

15. How many of these four expressions are perfect squares?

$1^3 + 2^3$ $1^3 + 2^3 + 3^3$ $1^3 + 2^3 + 3^3 + 4^3$ $1^3 + 2^3 + 3^3 + 4^3 + 5^3$

A 0 B 1 C 2 D 3 E 4

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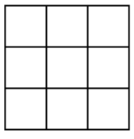
16. Each of the nine small squares in this grid can be coloured completely black or completely white.
What is the largest number of squares that can be coloured black so that the design created has rotational symmetry of order 2, but no lines of symmetry?



A 4 B 5 C 6 D 7 E 8