



Number Nest Weekly Challenge

1. It takes Sennet the centipede 8 seconds to put on a sock and 12 seconds to put on a shoe. She can only do one thing at a time. How long will it take Sennet to put socks and shoes on all her 100 legs?

- a) 200 seconds b) 800 seconds c) 1200 seconds
d) **2000 seconds** e) 2000 minutes

It will take 20 seconds for each foot, $20 \times 100 = 2000$ seconds.

2. 2011 is a prime number. One of these numbers is also prime. Which one?
a) 2012 b) 2013 c) 2015 **d) 2017** e) 2019

2012 is divisible by 2, 2013 is divisible by 3, 2015 is divisible by 5, 2019 is divisible by 3. But 2017 is a prime number.

3. Mustafa Lok wishes to choose his four-digit padlock code so that it is a multiple of 4 and each digit after the first is one more than the previous digit. What is the code he chooses?

Possible codes in which each number is one more than the previous digit are:

1 2 3 4 2 3 4 5 3 4 5 6 4 5 6 7 5 6 7 8 6 7 8 9 .

The only code here which is a multiple of four **3 4 5 6** .

4. A bottle contains 750ml of mineral water. Rachel drinks 50% more than Ross, and these two friends finish the bottle between them. How much does Rachel drink?

- a) 250ml b) 375ml c) 400ml **d) 450ml** e) 500ml

5. I have some strange dice: the faces show the numbers 1 to 6 as usual, except that the odd numbers are negative (i.e. -1, -3, -5 in place of 1, 3, 5). If I throw two such dice, which total cannot be achieved?

- a) 3 b) 4 c) 5 **d) 7** e) 8

$-1 + 4 = 3$; $2 + 2 = 4$; $1 + 6 = 5$ $2 + 6 = 8$

6. Granny says "I am 84 years old - not counting my Sundays". How old is she really?

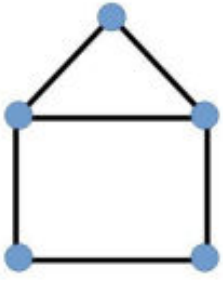
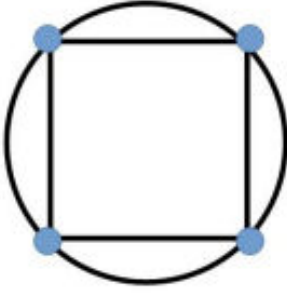
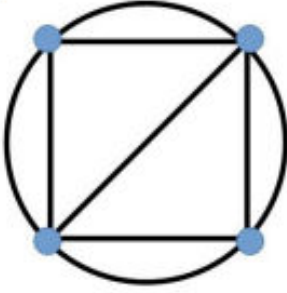
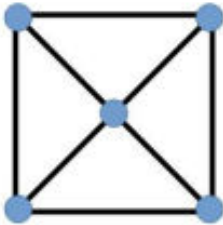
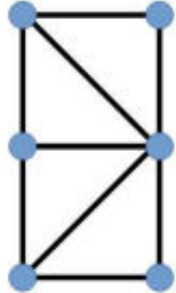
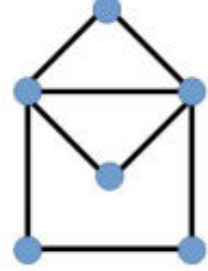
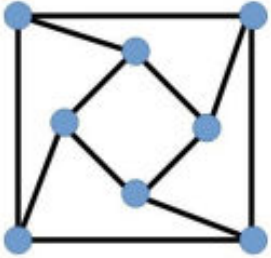
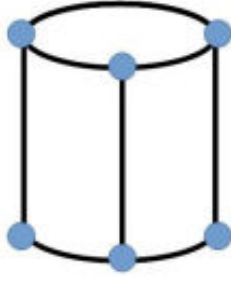
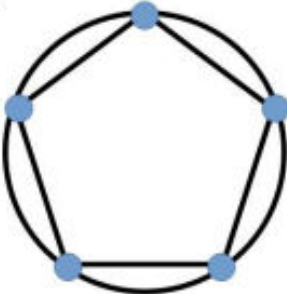
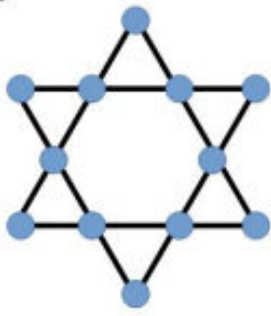
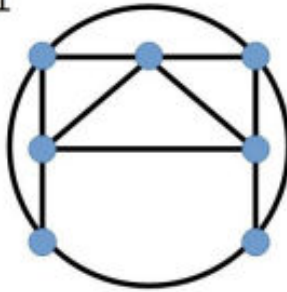
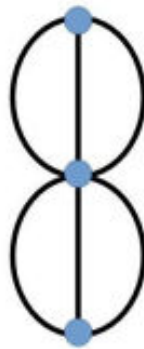
- a) 90 b) 91 c) 96 **d) 98** e) 99

$6/7$ of Granny's age is 84. Her age, therefore, is $84 \times 7/6 = 98$

Bonus Question - Traversing Networks

A traversable network is one you can draw without taking your pen off the paper, and without going over any edge twice.

Which of the following are traversable?

1 	2 	3 
4 	5 	6 
7 	8 	9 
10 	11 	12 

Answers

- 1) Yes
- 2) Yes
- 3) Yes
- 4) No
- 5) No
- 6) Yes
- 7) No
- 8) No
- 9) Yes
- 10) Yes
- 11) Yes
- 12) Yes