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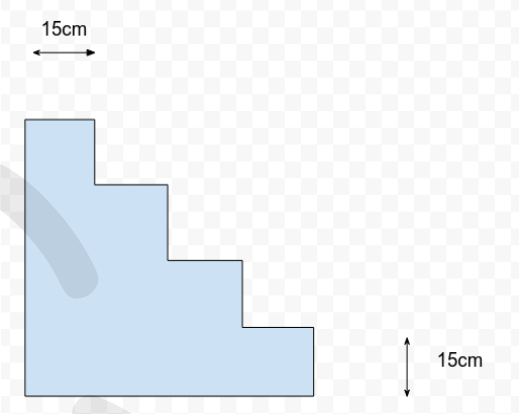
27. Calculate the perimeter of the staircase shape below.

Each step has the same height and depth as the others.



_____

28. A cube has a volume of 125 cm^3. What is the total length of all of its edges?

_____

29. Which number is missing?

3	4	11
5	7	19
7	3	?

_____

Sample

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34. The difference between two square numbers can be calculated using a shortcut as shown below:

$11^2 - 9^2 = (11 + 9) \times (11 - 9) = 20 \times 2 = 40$

Use this shortcut to fill in the line below:

$51^2 - 49^2 =$ (____ + ____) x (____ - ____) = ____ x ____ = _____

Use a similar method to calculate $1001^2 - 999^2$

_____

35. When a fair coin is tossed three times in a row there are eight possible outcomes, and each outcome is equally likely. They are listed below:

HHH HHT HTH HTT THH THT TTH TTT (H = heads. T = tails)

What is the probability that when I toss a coin three times:

- I will throw three heads in a row?

_____

- I will throw two heads in ANY ORDER?

_____

- If I have already thrown two heads in a row, what is the chance that the next throw will also be a head?

_____

Sample

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27. Complete the next two lines of the series below

$3 \times 5 + 1 = 16 = 4^2$

$4 \times 6 + 1 = 25 = 5^2$

$5 \times 7 + 1 = 36 = 6^2$

(a) _____

(b) _____

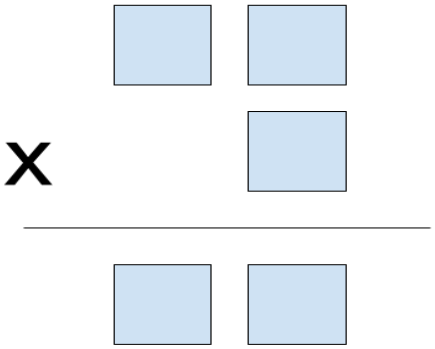
Use the trick above to quickly calculate:

(c) 49 x 51 _____

(d) 499 x 501 _____

28. Find p if: $5p + 9 = 3.5$ _____

29. Complete the multiplication sum using the digits 1 4 7 8 and 9



Sample

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