

1. Calculate

$$15 \times \frac{3}{5}$$

Solution: This is equal to  $15 \times 3 \div 5 = 45 \div 5 = \mathbf{9}$ .

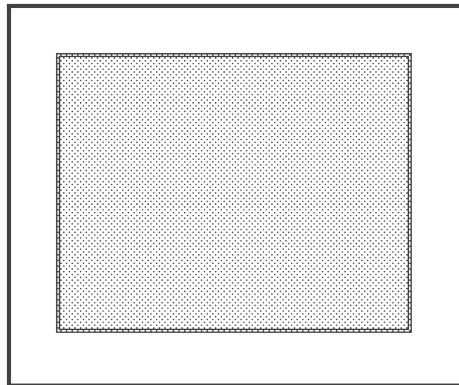
2. How many numbers between 1 and 30 (including 1 and 30) are divisible by both 2 and 5?

Solution: Being divisible by 2 and 5 is the same as being divisible by 10. There are 3 numbers between 1 and 30 that are divisible by 10 (10, 20, and 30), so the answer is **3**.

3. Eve’s brother Dave is twice her age. The sum of the ages of Eve and Dave is 21. How old is Eve?

Solution: Eve’s brother is twice her age. This means that the sum of Eve’s age and Dave’s age is 3 times Eve’s age, so 21 is 3 times Eve’s age. Therefore Eve’s age is  $21 \div 3 = \mathbf{7}$ .

4. A rectangular piece of carpet is placed on the floor of a rectangular room leaving a margin of 1 metre between the carpet and the walls of the room. If the room measures 9m by 7m, find the area of the room not covered by the carpet.



Solution: The area of the room is the product of the lengths of its sides (because the room is a rectangle), so the area of the room is  $7 \times 9 = 63$ . The carpet is also a rectangle, so its area is also the product of the lengths of its sides. The carpet has length  $9 - 2 = 7$  and width  $7 - 2 = 5$ , so its area is  $7 \times 5 = 35$ . The area of the room not covered by the carpet is therefore  $63 - 35 = \mathbf{28}$ .

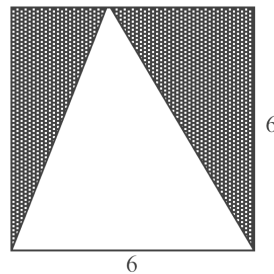
5. Gordon runs at 7 metres per second, and Harry runs at 5 metres per second. If Gordon runs for 9 seconds and Harry runs for 10 seconds, how much more distance does Gordon run compared to Harry?

Solution: Gordon runs for 9 seconds, and each second he runs 7 metres. This means Gordon runs  $9 \times 7 = 63$  metres in total. Harry runs for 10 seconds, and each second he runs 5 metres, so he runs 50 metres in total. This means Gordon runs  $63 - 50 = \underline{13}$  metres more than Harry.

6. Ivan bought 6 packs of apples. There were 4 apples in each pack. How many apples does Ivan have left after giving his sister half of one pack?

Solution: Ivan bought 6 packs of apples with 4 apples in each pack, so he bought  $6 \times 4 = 24$  apples in total. He then gave his sister half of one pack, which is  $4 \div 2 = 2$  apples. This means he was left with  $24 - 2 = \underline{22}$  apples.

7. Find the area of the shaded region below.



Solution: The area of the square is  $6 \times 6 = 36$ . The area of the white triangle is  $6 \times 6 \div 2 = 18$ . This means that the area of the shaded region is  $36 - 18 = \underline{18}$ .

8. There are 3 birdcages. The total number of birds in the 3 cages together is 36. If you take 8 birds from the first cage and put them in the second cage, and then take 6 birds from the second cage and put them in the third cage, then all three cages will have the same number of birds. How many birds are in the second cage at the very beginning?

Solution: After the birds are moved, all three cages have the same number of birds. Since there are 36 birds in total, each cage has  $36 \div 3 = 12$  birds after the birds are moved. In particular, the second cage has 12 birds at the end, so at the beginning it had  $12 + 6 - 8 = \underline{10}$ .