
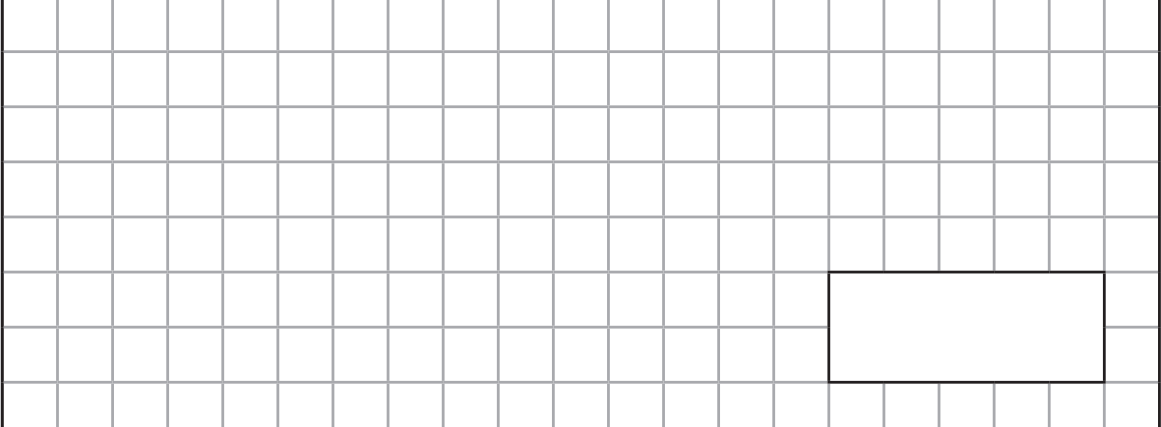



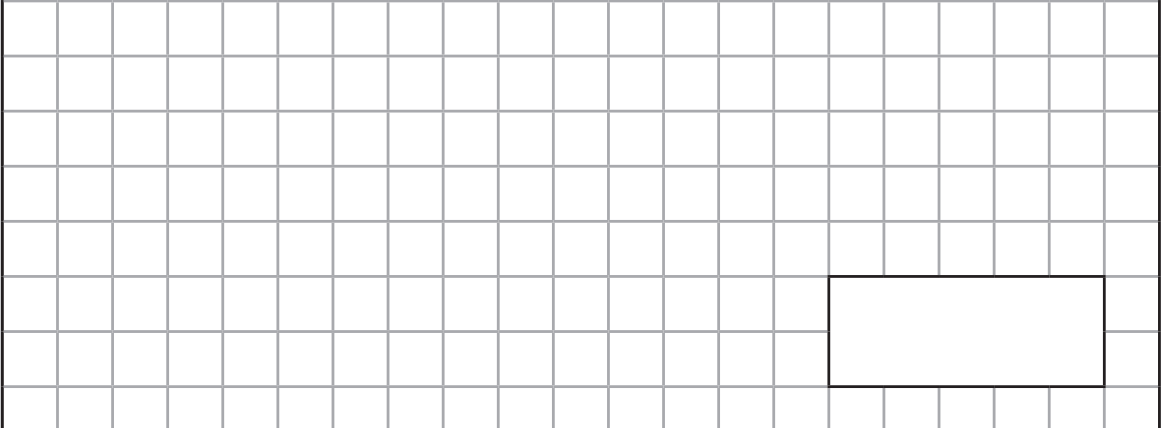
# Year 6 Arithmetic Quiz 3

Square and cube numbers.


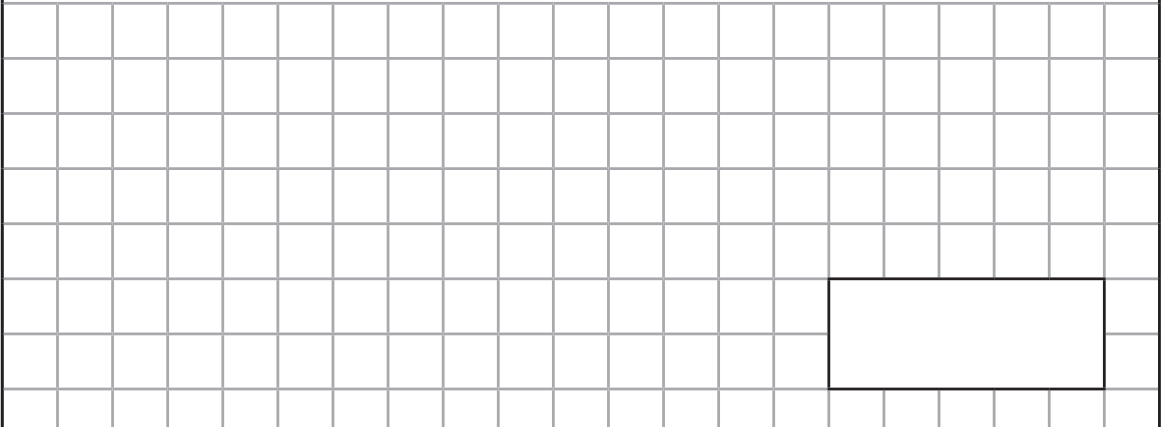
1  $3^2 =$



2  $5^2 =$



3  $7^2 =$































# Year 6 Arithmetic Quiz 3: Answers

- |         |           |
|---------|-----------|
| 1. 9    | 19. 240   |
| 2. 25   | 20. 228   |
| 3. 49   | 21. 296   |
| 4. 8    | 22. 32096 |
| 5. 27   | 23. 20162 |
| 6. 125  | 24. 67164 |
| 7. 78   | 25. 32032 |
| 8. 1045 | 26. 78225 |
| 9. 0    | 27. 71474 |
| 10. 0   | 28. 68    |
| 11. 61  | 29. 87    |
| 12. 261 | 30. 108   |
| 13. 288 | 31. 14    |
| 14. 192 | 32. 13    |
| 15. 90  | 33. 11    |
| 16. 70  | 34. 21    |
| 17. 224 | 35. 24    |
| 18. 168 | 36. 72    |

# Year 6 Arithmetic Quiz 3

## Multiply by 0 and 1, dividing by 1

Multiply any number by 0, and the answer is 0.

$$51 \times 0 = 0$$

Multiply any number by 1, and the answer is the number.

$$51 \times 1 = 51$$

Divide any number by 1, and the answer is the number.

$$51 \div 1 = 51$$

## Multiplying 3 numbers

The numbers can be multiplied in any order. Multiply 2 numbers, then multiply the answer by the other number. This can be useful in making the subsequent calculation easier.

Multiply first



$$7 \times 2 \times 4 = 28 \times 2 = 56$$

## Multiplication using formal methods

### Multiplication by 1 digit

1. Multiply  $9 \times 6 = 54$ . Write the 4 in the ones place and the 5 (tens) under the tens place. (It can sometimes be helpful to label the columns to label the columns 1, T, H)
2. Multiply  $4 \times 6 = 24$  (4 tens  $\times$  6 tens = 24 tens = 240). Add the carried 5 tens.  $24 + 5 = 29$  (24 tens + 5 tens = 29 tens). Write the 9 in the tens and 2 in the hundreds place.

		4	9	
	$\times$		6	
	2	9	4	
		5		

### Multiplication by 2 digits

1. Calculate  $4716 \times 4$  and write the answer in the first line under the calculation. (It can sometimes be helpful to label the columns 1, T, H, Th, TTh.)
2. Multiply  $6 \times 4 = 24$ . Write 4 in the ones place and the 2 above the tens place.
3. Multiply  $1 \times 4 = 4$  (1 ten  $\times$  4 ones = 4 tens). Add the 2 (tens),  $4 + 2 = 6$  (4 tens + 2 tens = 6 tens) and write 6 in the tens place.
4. Multiply  $7 \times 4 = 28$  (7 hundreds  $\times$  4 ones = 28 hundreds). Write the 8 in the hundreds place and the 2 above the thousands.

		$\times$	$\times$	$\times$	$\times$		
			4	7	1	6	
					2	4	
		1	8	8	6	4	
		9	4	3	2	0	
	1	1	3	1	8	4	
		1	1				



- Multiply  $4 \times 4 = 16$  (4 thousands  $\times$  4 ones = 16 thousands). Add the carried 2 (thousands),  $16 + 2 = 18$  (16 thousand + 2 thousand = 18 thousand). Write 18 in the ten thousands and thousands places.
- Repeat the process with  $4716 \times 20$  by writing the 0 in the ones place of the second line and multiplying  $4716 \times 2 = 9432$ . (Effectively multiplying by two then multiplying by 10.)
- Add  $18864 + 94320 = 113184$

## Division using formal methods

### Short division

- $2 \div 4 = 0$  r 2. Write the 2 next to the 1 (hundred). (It can sometimes be helpful to label the columns 1, T, H, Th.)
- $21 \div 4 = 5$  r 1. Write the 5 in the hundreds place of the answer and the remaining 1 next to the 9.
- $19 \div 4 = 4$  r 3. Write the 4 in the tens place of the answer and the remaining 3 next to the 6.
- $36 \div 4 = 9$ . Write the 9 in the ones place of the answer.

			5	4	9	
	4	2	<sup>2</sup> 1	<sup>1</sup> 9	<sup>3</sup> 6	

### Long division

- $85 \div 23 = 3$ . Write the 3 in the hundreds place of the answer. Write 69 ( $23 \times 3$ ) under the 85.
- Subtract  $85 - 69 = 16$ . Bring the 5 from the question down to make 165.
- $165 \div 23 = 7$ . Write the 7 in the tens place of the answer. Write 161 ( $23 \times 7$ ) under the 165.
- Subtract  $165 - 161 = 4$ . Bring the 6 down from the question to make 46.
- $46 \div 23 = 2$ . Write the 2 in the ones place of the answer.  
(It can sometimes be helpful to make rough notes of the key multiples of the divisor from which further multiples can be derived. For example,  $23 \times 2 = 46$ ;  $23 \times 5 = 115$ .)

			3	7	2	
	2	3	8	5	5	6
			6	9		
			1	6	5	
			1	6	1	
					4	6
					4	6
					0	0