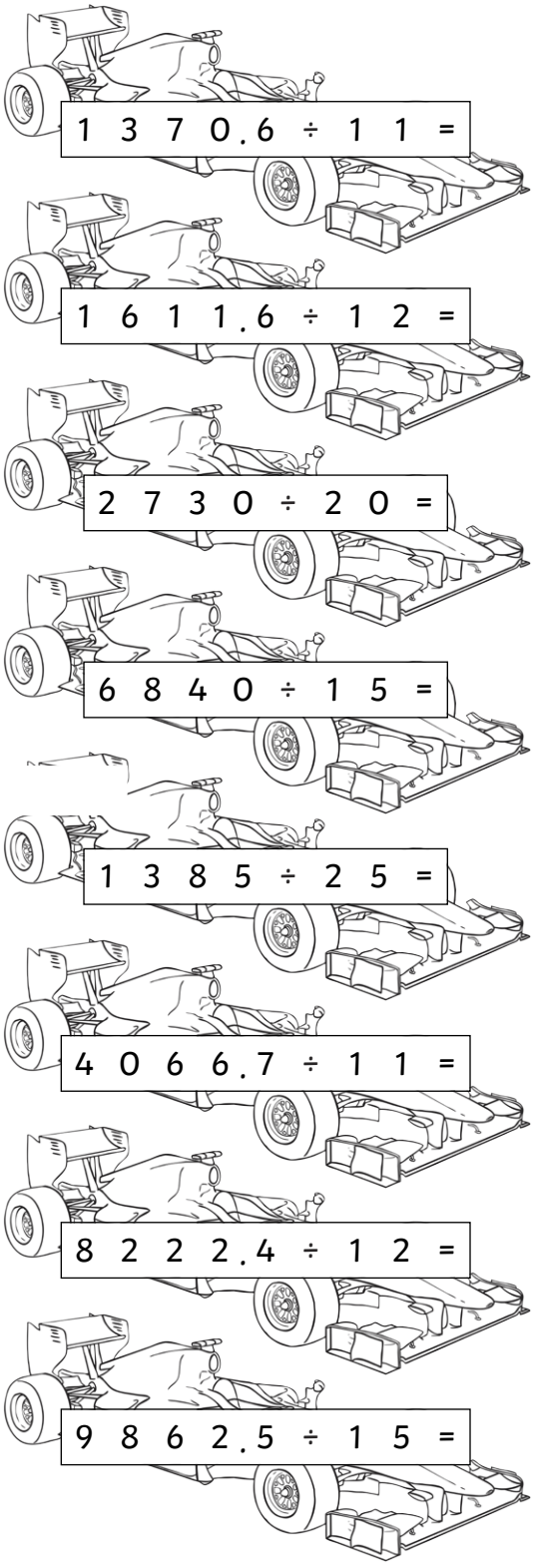
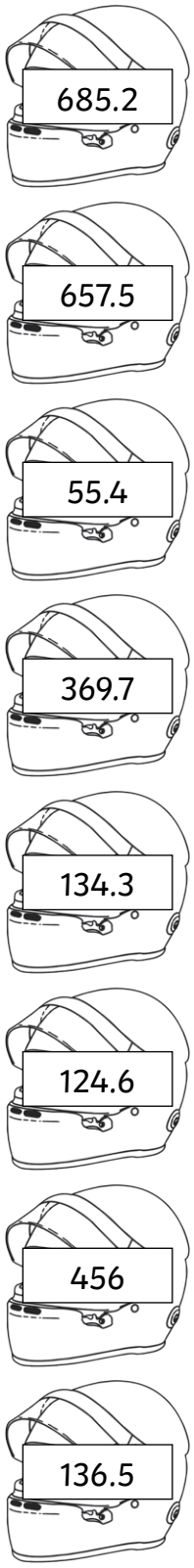
Extra Challenge

I can divide numbers by a two-digit number using short division.

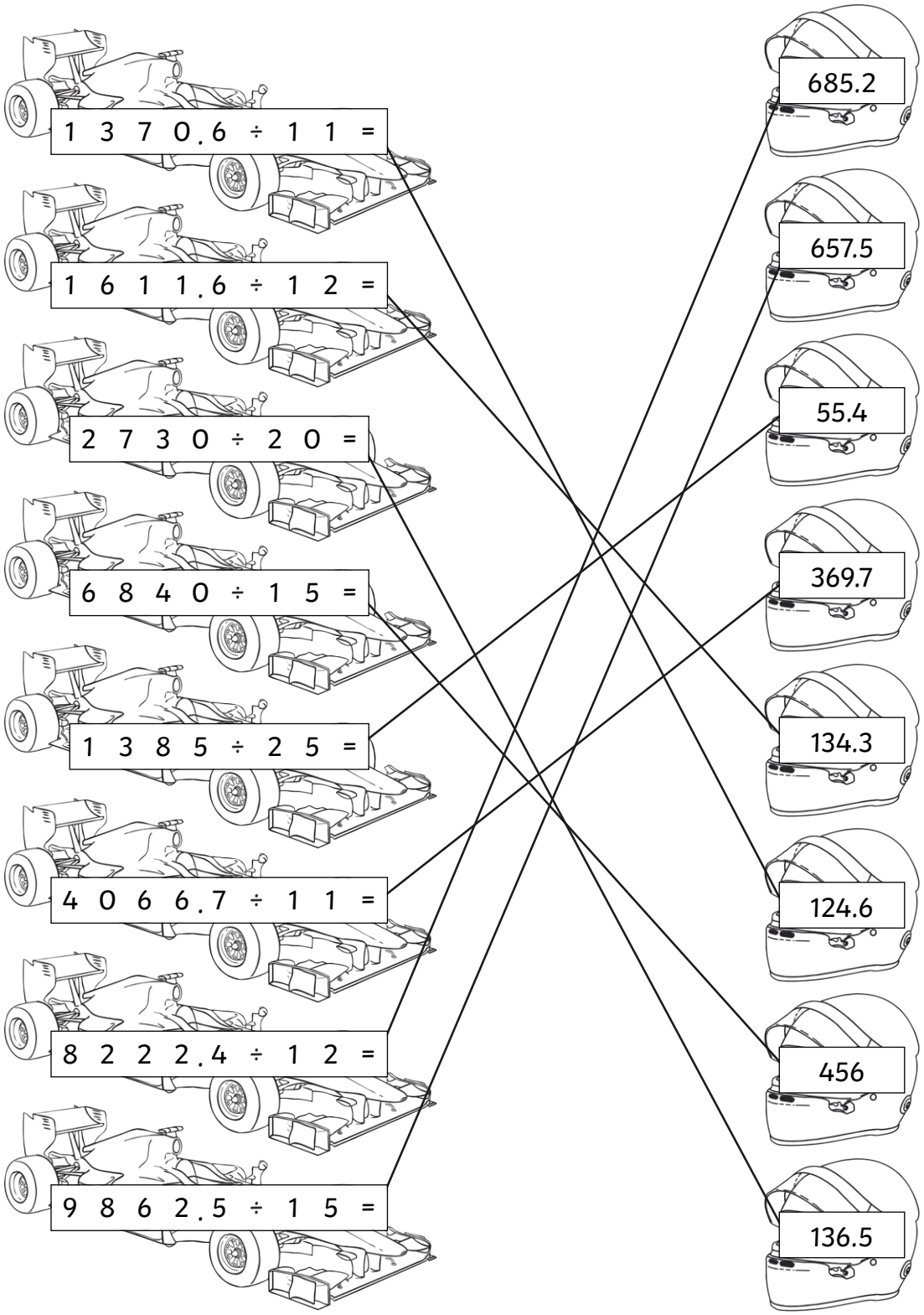
Match the race car to the correct helmet.





Extra Challenge **Answers**

Question	Answer
	Match the race car to the correct helmet.



	Th	H	T	O
Lowest Odd Number				
Highest Even Number				
Nearest Number to 5000				

	Th	H	T	O
Lowest Odd Number				
Highest Even Number				
Nearest Number to 5000				

	Th	H	T	O
Lowest Odd Number				
Highest Even Number				
Nearest Number to 5000				

	Th	H	T	O
Lowest Odd Number				
Highest Even Number				
Nearest Number to 5000				

	Th	H	T	O
Lowest Odd Number				
Highest Even Number				
Nearest Number to 5000				

	Th	H	T	O
Lowest Odd Number				
Highest Even Number				
Nearest Number to 5000				

	Th	H	T	O
Lowest Odd Number				
Highest Even Number				
Nearest Number to 5000				

	Th	H	T	O
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Highest Even Number				
Nearest Number to 5000				

	Th	H	T	O
Lowest Odd Number				
Highest Even Number				
Nearest Number to 5000				

	Th	H	T	O
Lowest Odd Number				
Highest Even Number				
Nearest Number to 5000				

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1)

Course	Total Race Length (metres)	Number of Laps	Lap Length (metres)
Goldrock	9375	5	**1875**
Badcopse	7612	11	**692**
Capse	8743	7	**1249**
Toby's Tor	9711	13	**747**

2) *343 bus journeys – 342 will be full and one will hold 6 fans.*

3) *36 race weekends with 8 tyres left over.*

1) *Accept an explanation that shows that Fernando has incorrectly divided 21 (hundreds) by 11 to equal 2 with one remainder. He then exchanged a remainder of 1 (hundreds) into 10 (tens) and regrouped this in the tens column. The correct answer should be 196.*

2) *Accept any correct explanation that shows that Daniel is incorrect. For example, 3000 ÷ 14 = 214 r4. As there is a remainder of 4, this means that he has completed 214 full laps and he will be four minutes (out of 14) into his next lap at the end of the 50 hours. Daniel has incorrectly rounded his answer up to the next whole number. His answer should be 214 as he did not complete the 215th lap.*

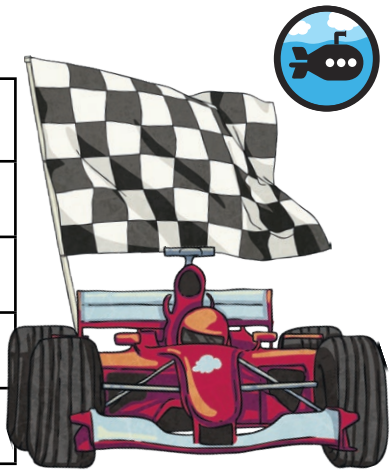
1) *Prediction reasoning might include spotting multiples of 5 or 10, or identifying odd and even numbers.*

1440 ÷ 11 = 130r10	1606 ÷ 11 = 146	3000 ÷ 11 = 272r7	4200 ÷ 11 = 381r8	7925 ÷ 11 = 720r5
1440 ÷ 12 = 120	1606 ÷ 12 = 133r10	3000 ÷ 12 = 250	4200 ÷ 12 = 350	7925 ÷ 12 = 660r5
1440 ÷ 15 = 96	1606 ÷ 15 = 107r1	3000 ÷ 15 = 200	4200 ÷ 15 = 280	7925 ÷ 15 = 528r5
1440 ÷ 20 = 72	1606 ÷ 20 = 80r6	3000 ÷ 20 = 150	4200 ÷ 20 = 210	7925 ÷ 20 = 396r4
1440 ÷ 25 = 57r15	1606 ÷ 25 = 64r6	3000 ÷ 25 = 120	4200 ÷ 25 = 168	7925 ÷ 25 = 317

2)

	=	846 seconds
	=	282 seconds
	=	47 seconds

1) Use short division to calculate the length of one lap in each race.



Course	Total Race Length (metres)	Number of Laps	Lap Length (metres)
Goldrock	9375	5	
Badcopse	7612	11	
Capse	8743	7	
Toby's Tor	9711	13	

2) Race fans are transported from the car park to the circuit by minibus. The minibus seats 12 people. How many journeys will the bus need to make if 4110 fans use the car park?

3) A team uses forty tyres each race weekend. The team has ordered 1448 tyres. How many race weekends can they attend? Will there be any tyres left over?

1) Felicity has carried out this short division to calculate the number of seats per row in Capse Grandstand. There are 2156 seats in eleven rows. She did not expect his answer to have a remainder so thinks that she might have made a mistake. Explain Felicity's error and work out the correct answer.

$$
\begin{array}{r|llll}
 & 2 & 1 & 4 & r2 \\
\hline
11 & 2 & 1 & 5 & 6 \\
 & 2 & 1 & 4 &
\end{array}
$$

2) Daniel is working out how many full laps of Goldrock Circuit he could complete in 50 hours. Each lap takes him 14 minutes to complete. He has correctly worked out that 50 hours is 3000 minutes.

I can complete 215 full laps in 50 hours.

Do you agree? Explain your answer.

1) Organisers for a race must decide how to organise the seats. Organise the seats in three different ways choosing a number of rows (divisor) and a number of seats (dividend) from the lists. Predict whether your answer will have a remainder or not. Can you explain your reasons? Finally, calculate how many seats will be in each row.

Number of Rows	Number of Seats
11	1440
12	1606
15	3000
20	4200
25	7925

Number of Rows	Number of Seats	Remainder Prediction	Final Calculation

2) The information below shows some times for different vehicles completing laps of Bashmound Circuit. If one vehicle equates to one lap, can you work out the lap time for each vehicle?

	=	9306 seconds
	=	
	=	

	=	
	=	
	=	

1) Use short division to calculate the length of one lap in each race.

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$$\begin{array}{r|rrrr} & & 2 & 1 & 4 \quad r2 \\ \hline & & 2 & 1 & 4 \\ 11 & 2 & 1 & 5 & 6 \end{array}$$

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Do you agree? Explain your answer.

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Number of Rows	Number of Seats
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20	4200
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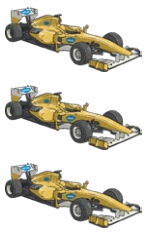
2) The information below shows some times for different vehicles completing laps of Bashmound Circuit. If one vehicle equates to one lap, can you work out the lap time for each vehicle?

	=	9306 seconds
	=	
	=	

	=	
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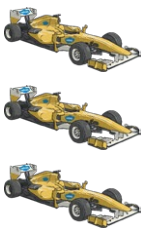
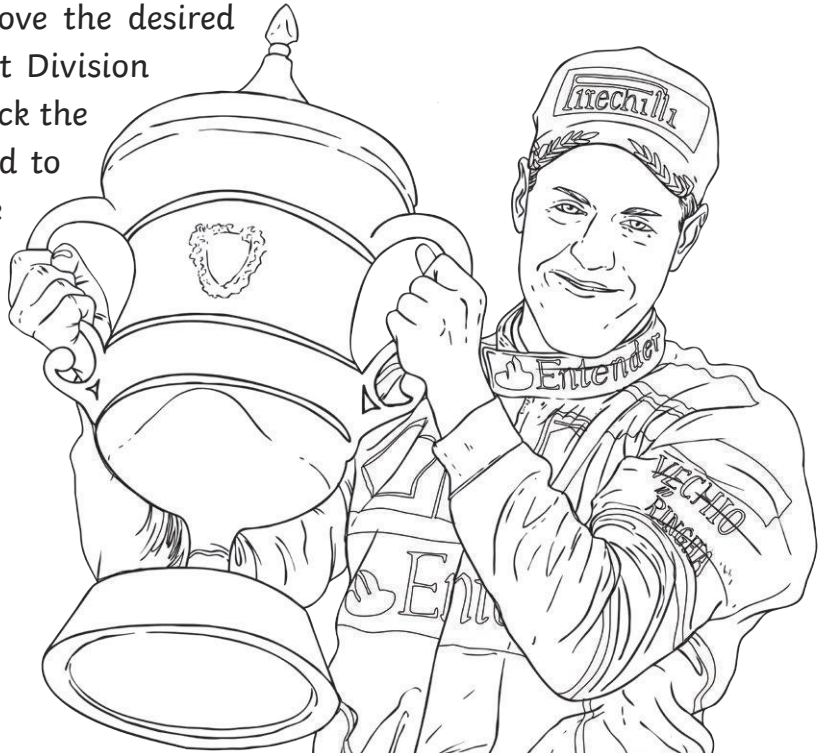
	=	
	=	

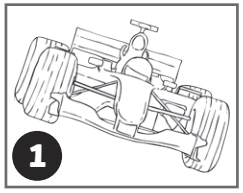
	=	
	=	
	=	

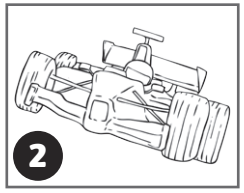
Engines Ready Game

I can divide numbers by a two-digit number using short division.

Place your race cars on the start square. Taking turns, roll the dice and move the desired number of spaces. Complete the calculation that you land on using the Short Division Record Sheet. Once you have completed the calculation, ask your partner to check the calculation using a calculator. If you have the incorrect answer, you will need to move your race car back to where you began your turn. The first race car to the end of the track wins.







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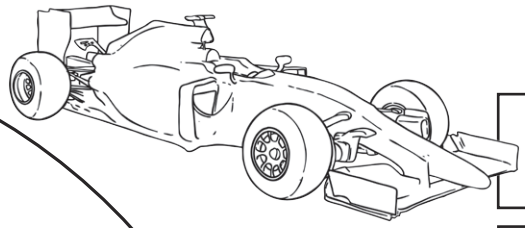


Finish

840 ÷ 20	740 ÷ 20
996 ÷ 12	420 ÷ 12
444 ÷ 12	828 ÷ 12

450 ÷ 10

693 ÷ 11

520 ÷ 10

740 ÷ 10

759 ÷ 11

950 ÷ 10

858 ÷ 11

902 ÷ 11

530 ÷ 10

990 ÷ 10

825 ÷ 11

682 ÷ 11

110 ÷ 10

816 ÷ 12

420 ÷ 10

540 ÷ 12

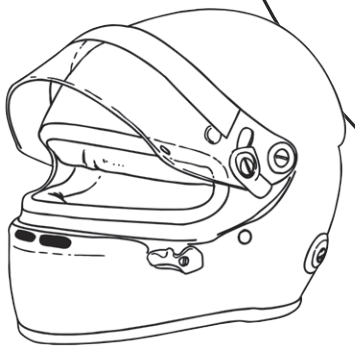
504 ÷ 12

495 ÷ 11

737 ÷ 11

936 ÷ 12

Start



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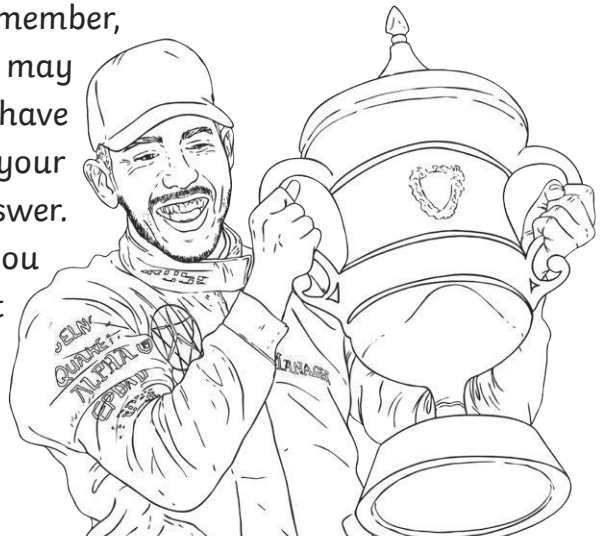
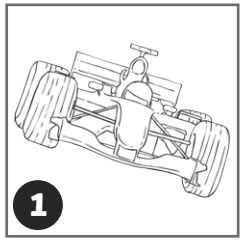
Race Track Game

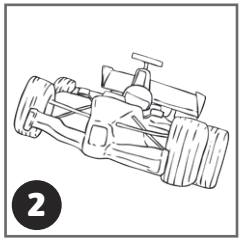
I can divide numbers by a two-digit number using short division.

Place your race cars anywhere on the track. Take turns to roll the dice and move your race car the desired number of spaces on the track. After, select a card to form a division calculation, e.g. 4534 ÷ 12. Complete the calculation. Remember, some of the calculations may have a remainder. Once you have finished the calculation, get your partner to check your answer. If your answer is correct, you score one track point. Repeat the process. The player with the most track points at the end of the game wins.



Racer One Track Point Score	Racer Two Track Point Score





÷ 11

÷ 12

÷ 20

÷ 10

÷ 50

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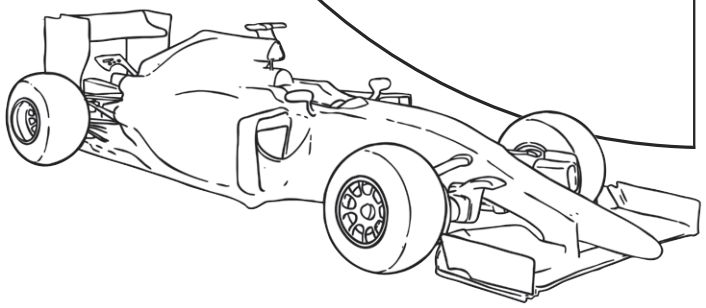

2856	5925	2561	5925	2956
6242	2953	4950	2984	5914
2492	3674			4872
6448	3952	9583	6852	5928
4624	5825	6936	3931	4814
				3645

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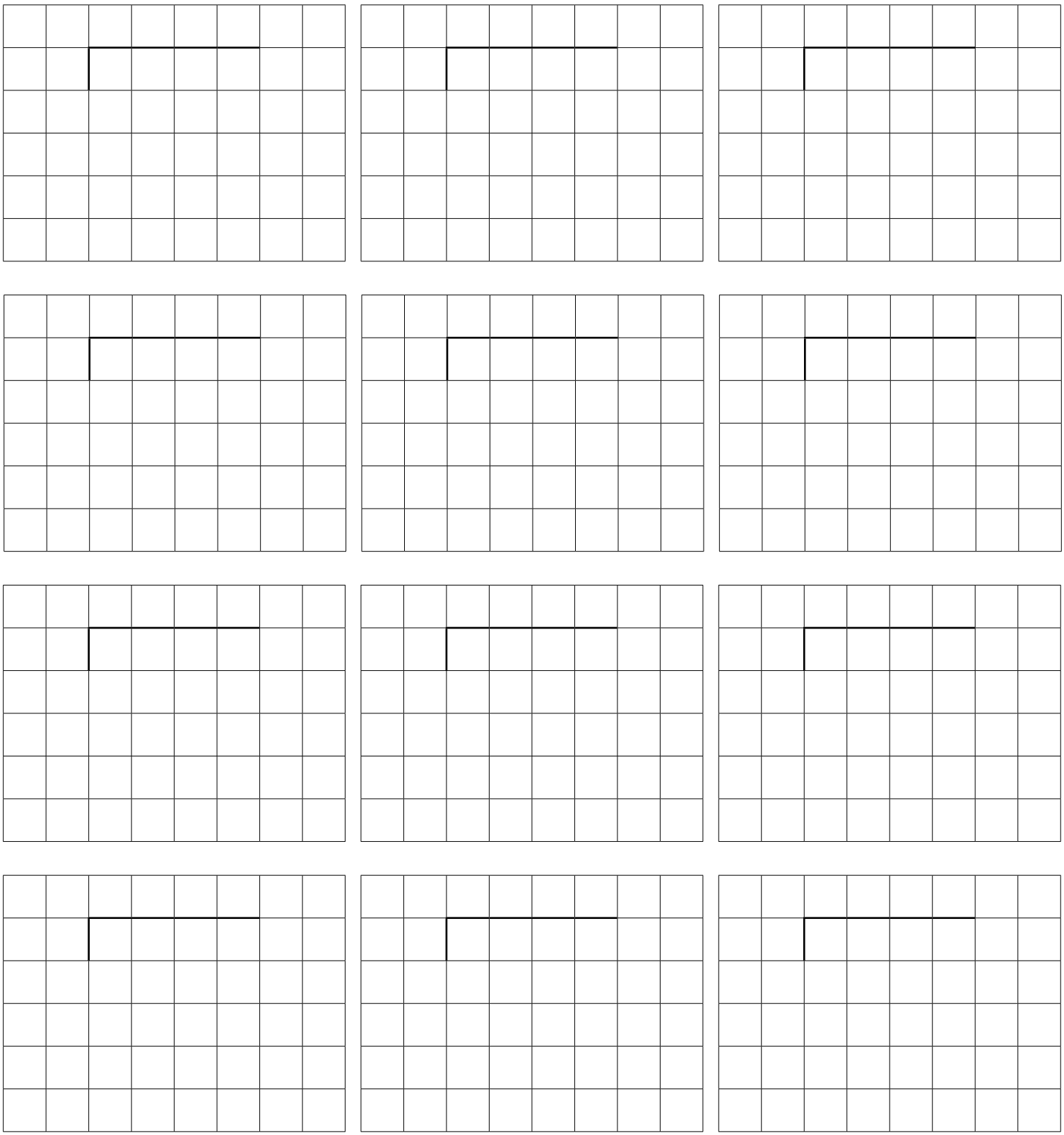
Short Division Record Sheet

I can divide numbers by a two-digit number using short division.



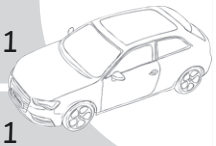
Top Speed (mph)	1141 ÷ 20
Engine Size	1456 ÷ 11
Cool Factor	5834 ÷ 25

Round the answers to two decimal places.

Top Speed (mph)	4284 ÷ 11
Engine Size	5728 ÷ 25
Cool Factor	5925 ÷ 10

Round the answers to two decimal places.

Top Speed (mph)	5825 ÷ 11
Engine Size	7264 ÷ 11
Cool Factor	8787 ÷ 10



Round the answers to two decimal places.

Top Speed (mph)	5274 ÷ 50
Engine Size	5828 ÷ 12
Cool Factor	3194 ÷ 10

Round the answers to two decimal places.

Top Speed (mph)	5828 ÷ 11
Engine Size	8356 ÷ 12
Cool Factor	7475 ÷ 11

Round the answers to two decimal places.

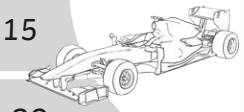
Top Speed (mph)	6075 ÷ 12
Engine Size	6345 ÷ 15
Cool Factor	6474 ÷ 20

Round the answers to two decimal places.

Top Speed (mph)	4928 ÷ 20
Engine Size	5138 ÷ 50
Cool Factor	4837 ÷ 12

Round the answers to two decimal places.

Top Speed (mph)	4295 ÷15
Engine Size	5295 ÷ 20
Cool Factor	5829 ÷ 25



Round the answers to two decimal places.

Top Speed (mph)	7742 ÷ 50
Engine Size	2457 ÷ 12
Cool Factor	1175 ÷ 11

Round the answers to two decimal places.

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Top Speed (mph)	5352 ÷ 20
Engine Size	6532 ÷ 50
Cool Factor	6883 ÷ 15

Round the answers to two decimal places.

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