Divide by 7. *Stg E6 x/÷*

Name: _____

The Sevens are probably my favourite set of times-tables, they're brimming with interesting numbers! When dividing by 7, the quickest way *by far* is to know your basic facts, back to front. Once that's in place we can use our family of facts to quickly sort out ÷ 7 problems. Remember, to figure out the 7 x table in the first place you can **split** 7 into 5 + 2 (**7 x 2 =** ?? 5 x 2 = 10 **+** 2 x 2 = 4, 10 + 4 = **14**)

E.g. What is **14 ÷ 7**? We know that **2 x 7 = 14**, so using the 'family' we know 14 ÷ 7 = **2**
Try these ones to build up your division basic facts:

1.	7 x 6 = ___	So __ ÷ 7 = 6	and	___ ÷ 6 = 7
2.	7 x 4 = ___	So __ ÷ 7 = 4	and	___ ÷ 4 = 7
3.	7 x 10 = ___	So __ ÷ 7 = 10	and	___ ÷ 10 = 7
4.	7 x 7 = ___	So __ ÷ 7 = 7	and	___ ÷ 7 = 7
5.	7 x 5 = ___	So __ ÷ 7 = 5	and	___ ÷ 5 = 7
6.	7 x 9 = ___	So __ ÷ 7 = 9	and	___ ÷ 9 = 7
7.	7 x 11 = ___	So __ ÷ 7 = 11	and	___ ÷ 11 = 7
8.	7 x 3 = ___	So __ ÷ 7 = 3	and	___ ÷ 3 = 7
9.	7 x 8 = ___	So __ ÷ 7 = 8	and	___ ÷ 8 = 7
10.	7 x 12 = ___	So __ ÷ 7 = 12	and	___ ÷ 12 = 7

7 is an odd number. How do you make seven even? Simply subtract the 'S'! …OK, I'll admit it, I have a serious bad-joke problem.

Let's practice the basic facts (Yes, I know, but it's worth it, trust me)

49 ÷ 7 = ___	63 ÷ 7 = ___	21 ÷ 7 = ___	35 ÷ 7 = ___	42÷ 7 = ___
14 ÷ 7 = ___	77 ÷ 7 = ___	84 ÷ 7 = ___	56 ÷ 7 = ___	28 ÷ 7 = ___

Next, it's good to know about **Dividing with a remainder:** E.g **24 ÷ 7 = ??** Clearly, it doesn't fit. We know that 21 ÷ 7 = 3, and that 28 ÷ 7 = 4. We just choose the one that fits inside 24 (21), then take away 21 from 24 (**24 – 21 = 3**) So **24 ÷ 7 = 3 r3** … That's 3 times with a remainder of 3 (Which can also be called 3/7). Let's try:

1.	8 ÷ 7 = __ r __	7 x ___ = 7	8 - 7 = ___ (remainder)
2.	16 ÷ 7 = __ r __	7 x ___ = 14	16 - 14 = ___ (r)
3.	19 ÷ 7 = __ r __	7 x ___ = 14	19 - 14 = ___ (r)
4.	29 ÷ 7 = __ r __	7 x ___ = 28	29 - 28 = ___ (r)
5.	26 ÷ 7 = __ r __	7 x ___ = 24	26 - 24 = ___ (r)
6.	80 ÷ 7 = __ r __	7 x ___ = 77	80 - 77 = ___ (r)
7.	27 ÷ 7 = __ r __	7 x ___ = 21	27 - 21 = ___ (r)
8.	37 ÷ 7 = __ r __	7 x ___ = 35	37 - 35 = ___ (r)
9.	68 ÷ 7 = __ r __	7 x ___ = 63	68 - 63 = ___ (r)
10.	50 ÷ 7 = __ r __	7 x ___ = 49	50 - 49 = ___ (r)

Cool 7 fact: If you throw 2 dice, you have the greatest chance of getting 7

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Nastier divided by 7 problems: We can use a combination of our basic facts and place value to figure out some of the very large or very small divided-by problems.

E.g. We know that 7 x 8 = 56 and naturally 56 ÷ 7 = 8. So then **560** ÷ 7 = **80** and **5.6** ÷ 7 = **0.8** Cool! With decimal numbers, watch out that you shift the place value enough times. Say if you get 5.6 ÷ 0.7, the value will shift twice and you'll end up with a whole number again: **5.6 ÷ 0.7 = 8** (there are eight 0.7s in 5.6 – true)

1. 63 ÷ 7 = ____	630 ÷ 7 = _____	6.3 ÷ 7 = ____	6300 ÷ 7 = _____
2. 49 ÷ 7 = ____	490 ÷ 7 = _____	4.9 ÷ 7 = ____	490000 ÷ 7 = _____
3. 35 ÷ 7 = ____	350 ÷ 7 = _____	3.5 ÷ 7 = ____	3.5 ÷ 0.7 = _____
4. 28 ÷ 7 = ____	280 ÷ 7 = _____	2.8 ÷ 7 = ____	2800 ÷ 7 = _____
5. 42 ÷ 7 = ____	420 ÷ 7 = _____	4.2 ÷ 7 = ____	4.2 ÷ 0.7 = _____
6. 84 ÷ 7 = ____	840 ÷ 7 = _____	8.4 ÷ 7 = ____	84000 ÷ 7 = _____
7. 21 ÷ 7 = ____	210 ÷ 7 = _____	2.1 ÷ 7 = ____	2.1 ÷ 0.7 = _____

So how do we solve an even trickier one like 546 ÷ 7 = ?? The answer (as it often is) is to split it into smaller easier bits! Hopefully you have had some practice with other times-tables using this method of fast long division:

$$\begin{array}{r} 78 \\ 7\overline{)\,54^{5}6} \end{array}$$

1. Look at numbers that can be divided by 7, starting on the left. The '5' in the 100s column is too small, so go to '**54**'. (it's actually 54 tens BTW)
2. **54 ÷ 7 = 7 r5** (54-49=5) Put the '**7**' above on the answer line
3. Put the **r5** in the 1s column on the left of the 4. to make '56'
4. **56 ÷7 = 8**. Put the '**8**' in the 1s place on the answer line – all done! Answer: **78**

To see a video of this technique in action, scan the QR code here with your tablet.

Cool 7 fact: 999 999 ÷ 7 = **142857** (*Ok, where's this going*)
1 ÷ 7 = 0.142857**142857**142857**142857**142857…

OK, your turn: don't forget to stick in the remainder at the end!

a. $7\overline{)567}$	b. $7\overline{)315}$	c. $7\overline{)721}$	d. $7\overline{)476}$
e. $7\overline{)7842}$	f. $7\overline{)9545}$	g. $7\overline{)7487}$	h. $7\overline{)1071}$
i. $7\overline{)8368}$	j. $7\overline{)9348}$	k. $7\overline{)1876}$	l. $7\overline{)5625}$
m. $7\overline{)8657}$	n. $7\overline{)2748}$	o. $7\overline{)1096}$	p. $7\overline{)8007}$

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