

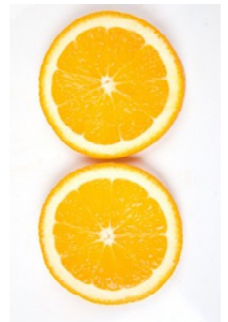
The divide by 2 strategy. Stg 5/E6 \times/\div

Name: _____

Ok, by now you've learned how to halve (that is divide by 2) basic numbers. Like half of 8 is 4, half of 12 is 6 and so on. We can easily halve simple, even numbers right? (Good, 'coz you're gonna need that mad skill). What about tricky ~~odd~~ numbers, or tricky **large** numbers? Once again, the answer lies in splitting it up in to small easy chunks. Let's start with odd numbers. E.G. What is half of **17**? (You can write this question as $\frac{1}{2} \times 17$, or 17×0.5 , or $17 \div 2$ whatever floats your boat) The first thing you'll notice is that you can't chop odd numbers into two whole, even parts. Bummer. Not to worry, just take 1 off, and split that first. (Any odd number becomes even when you take 1 away). So now you've got 0.5 and 0.5, or $\frac{1}{2}$ and a $\frac{1}{2}$ plus 16. Sweet, now just chop **16 in half – that's 8!** Then glue on your half from the 1 and you get a total of 8.5 or $8\frac{1}{2}$.

So $\frac{1}{2}$ of 17 = 8.5 - Seems easy enough, so let's try a few:

1. $\frac{1}{2} \times 15 = ??$ Think: $15 = 14 + 1$. So $\frac{1}{2}$ of 14 = **7** + 0.5 = **7.5**
2. $\frac{1}{2} \times 19 = ??$ Think: $19 = 18 + 1$. So $\frac{1}{2}$ of 18 = ____ + 0.5 = ____
3. $\frac{1}{2}$ of 23 = ?? Think: $23 = 22 + 1$. So $\frac{1}{2}$ of 22 = ____ + $\frac{1}{2}$ = ____
4. $\frac{1}{2} \times 39 = ??$ Think: $39 = 38 + 1$. So $\frac{1}{2} \times 38 = ____ + 0.5 = ____$
5. $\frac{1}{2} \times 27 = ??$ Think: $27 = 26 + 1$. So $\frac{1}{2}$ of 26 = ____ + $\frac{1}{2}$ = ____
6. $\frac{1}{2}$ of 33 = ?? Think: $33 = 32 + 1$. So $\frac{1}{2}$ of 32 = ____ + 0.5 = ____



Alright; now for big tricky numbers. Actually you do a similar trick. Take a number like **90** – it's a little nasty to halve right? First knock off 10 – you know **half of 10 is 5** so there's your 'ones' column sorted. Then just halve 80 – which you know using place value is 40. Stick 'em back together and you get a total of 45. So, **$\frac{1}{2}$ of 90 = 45.**

1. $\frac{1}{2}$ of 70 = ?? Think: $70 = 60 + 10$. So $\frac{1}{2}$ of 60 = **30** + 5 = **35**
2. $\frac{1}{2}$ of 110 = ?? Think: $110 = 100 + 10$. So $\frac{1}{2}$ of 100 = ____ + 5 = ____
3. $\frac{1}{2}$ of 170 = ?? Think: $170 = 160 + 10$. So $\frac{1}{2}$ of 160 = ____ + 5 = ____
4. $\frac{1}{2}$ of 50 = ?? Think: $50 = 40 + 10$. So $\frac{1}{2}$ of 40 = ____ + 5 = ____
5. $\frac{1}{2}$ of 130 = ?? Think: $130 = 120 + 10$. So $\frac{1}{2}$ of 120 = ____ + 5 = ____
6. $\frac{1}{2}$ of 190 = ?? Think: $190 = 180 + 10$. So $\frac{1}{2}$ of 180 = ____ + 5 = ____
7. $\frac{1}{2}$ of 230 = ?? Think: $230 = 220 + 10$. So $\frac{1}{2}$ of 220 = ____ + 5 = ____
8. $\frac{1}{2}$ of 250 = ?? Think: $250 = 240 + 10$. So $\frac{1}{2}$ of 240 = ____ + 5 = ____
9. $\frac{1}{2}$ of 270 = ?? Think: $270 = 260 + 10$. So $\frac{1}{2}$ of 260 = ____ + 5 = ____
10. $\frac{1}{2}$ of 310 = ?? Think: $310 = 300 + 10$. So $\frac{1}{2}$ of 300 = ____ + 5 = ____

Before long, you'll be able to do this in your head! Yay!

The divide by 2 strategy. Stg 6/E7 x/÷

Name: _____

Right-o, now it's time to get serious. What's a cool way to chop obnoxiously nasty numbers in half? There are a few cool tricks, but possibly the easiest is to use a version of a good ~~old-fashioned~~ multiplication algorithm (groan). Remember – keep your columns!

E.g. What is $\frac{1}{2}$ of 2354? (or 2354×0.5 or $2354 \div 2$ – same thing)

| | | |
|---|--|---|
| <p>E.g. 2354</p> <p> X 0.5</p> <hr style="width: 10%; margin-left: 10%;"/> <p>$\frac{1}{2}$ of 4 = 2</p> <p>$\frac{1}{2}$ of 50 = 25</p> <p>$\frac{1}{2}$ of 300 = 150</p> <p>$\frac{1}{2}$ of 2000 = 1000</p> <p>(Adds to) = 1177</p> | <p>a. 4768</p> <p> X 0.5</p> <hr style="width: 10%; margin-left: 10%;"/> <p>$\frac{1}{2}$ of 8 = 4</p> <p>$\frac{1}{2}$ of 60 = 30</p> <p>$\frac{1}{2}$ of 700 = 350</p> <p>$\frac{1}{2}$ of 4000 = 2000</p> <p> =</p> | <p>b. 3687</p> <p> X 0.5</p> <hr style="width: 10%; margin-left: 10%;"/> <p>$\frac{1}{2}$ of 7 = 3.5</p> <p>$\frac{1}{2}$ of 80 =</p> <p>$\frac{1}{2}$ of 600 =</p> <p>$\frac{1}{2}$ of 3000 = _____</p> <p> =</p> |
|---|--|---|

| | | |
|---|--|---|
| <p>c. 4682</p> <p> X 0.5</p> <hr style="width: 10%; margin-left: 10%;"/> <p>$\frac{1}{2}$ of 82 =</p> <p>$\frac{1}{2}$ of 600 =</p> <p>$\frac{1}{2}$ of 4000 =</p> <p> _____ =</p> | <p>d. 6485</p> <p> X 0.5</p> <hr style="width: 10%; margin-left: 10%;"/> <p>$\frac{1}{2}$ of 5 =</p> <p>$\frac{1}{2}$ of 80 =</p> <p>$\frac{1}{2}$ of 400 =</p> <p>$\frac{1}{2}$ of 6000 = _____</p> <p> =</p> | <p>e. 5680</p> <p> X 0.5</p> <hr style="width: 10%; margin-left: 10%;"/> <p>$\frac{1}{2}$ of 80 =</p> <p>$\frac{1}{2}$ of 600 =</p> <p>$\frac{1}{2}$ of 5000 = _____</p> <p> =</p> |
|---|--|---|

Ok, you're ready to go freestyle! Use the space below to work things out – you'll probably figure out some shortcuts on the way!

f. 5432×0.5 g. 46732×0.5 h. 89438×0.5 i. 6864×0.5

The divide by 2 strategy. Stg 6/E7 x/÷ **ANSWERS**

Right-o, now it's time to get serious. What's a cool way to chop obnoxiously nasty numbers in half? There are a few cool tricks, but possibly the easiest is to use a version of a good ~~old-fashioned~~ multiplication algorithm (groan). Remember – keep your columns!

E.g. What is $\frac{1}{2}$ of 2354? (or 2354×0.5 or $2354 \div 2$ – same thing)

| | | |
|--|--|--|
| <p>E.g. 2354</p> <p> X 0.5</p> <hr style="width: 10%; margin: 0 auto;"/> <p>$\frac{1}{2}$ of 4 = 2</p> <p>$\frac{1}{2}$ of 50 = 25</p> <p>$\frac{1}{2}$ of 300 = 150</p> <p>$\frac{1}{2}$ of 2000 = 1000</p> <hr style="width: 10%; margin: 0 auto;"/> <p>= 1177</p> | <p>a. 4768</p> <p> X 0.5</p> <hr style="width: 10%; margin: 0 auto;"/> <p>$\frac{1}{2}$ of 8 = 4</p> <p>$\frac{1}{2}$ of 60 = 30</p> <p>$\frac{1}{2}$ of 700 = 350</p> <p>$\frac{1}{2}$ of 4000 = 2000</p> <hr style="width: 10%; margin: 0 auto;"/> <p>= 2384</p> | <p>b. 3687</p> <p> X 0.5</p> <hr style="width: 10%; margin: 0 auto;"/> <p>$\frac{1}{2}$ of 7 = 3.5</p> <p>$\frac{1}{2}$ of 80 = 40</p> <p>$\frac{1}{2}$ of 600 = 300</p> <p>$\frac{1}{2}$ of 3000 = 1500</p> <hr style="width: 10%; margin: 0 auto;"/> <p>= 1843.5</p> |
|--|--|--|

| | | |
|--|---|---|
| <p>c. 4682</p> <p> X 0.5</p> <hr style="width: 10%; margin: 0 auto;"/> <p>$\frac{1}{2}$ of 82 = 41</p> <p>$\frac{1}{2}$ of 600 = 300</p> <p>$\frac{1}{2}$ of 4000 = 2000</p> <hr style="width: 10%; margin: 0 auto;"/> <p>= 2341</p> | <p>d. 6485</p> <p> X 0.5</p> <hr style="width: 10%; margin: 0 auto;"/> <p>$\frac{1}{2}$ of 5 = 2.5</p> <p>$\frac{1}{2}$ of 80 = 40</p> <p>$\frac{1}{2}$ of 400 = 200</p> <p>$\frac{1}{2}$ of 6000 = 3000</p> <hr style="width: 10%; margin: 0 auto;"/> <p>= 3242.5</p> | <p>e. 5680</p> <p> X 0.5</p> <hr style="width: 10%; margin: 0 auto;"/> <p>$\frac{1}{2}$ of 80 = 40</p> <p>$\frac{1}{2}$ of 600 = 300</p> <p>$\frac{1}{2}$ of 5000 = 2500</p> <hr style="width: 10%; margin: 0 auto;"/> <p>= 2840.</p> |
|--|---|---|

Ok, you're ready to go freestyle! Use the space below to work things out – you'll probably figure out some shortcuts on the way!

| | | | |
|---------------|----------------|----------------|---------------|
| f. 5432 x 0.5 | g. 46732 x 0.5 | h. 89438 x 0.5 | i. 6864 x 0.5 |
| = 2716 | = 23366 | = 44719 | = 3432 |