MATHEMATICS · GRADES 7-9

Estimation and mental arithmetic

Difficulty level: Intermediate

Mathematics: Grades 7-9

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Overview of the concept

This is how you judge answers fast without a calculator. You work out a shopping total in your head, or check whether a calculator result looks right, by rounding to friendly numbers first. It is the skill you use every day, from splitting a bill to checking a receipt. Mental maths keeps you from being fooled by a wrong button press or a misread number.

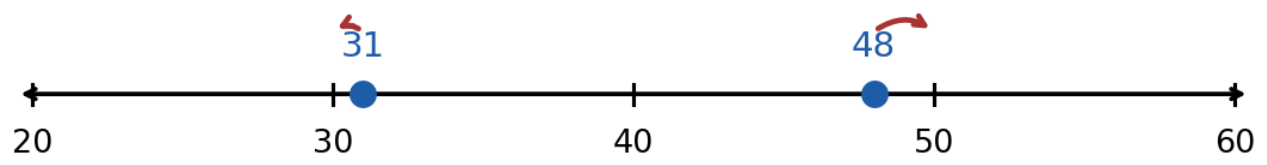


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Worked examples

EXAMPLE 1

Q Estimate 48 + 31 by rounding



SOLUTION

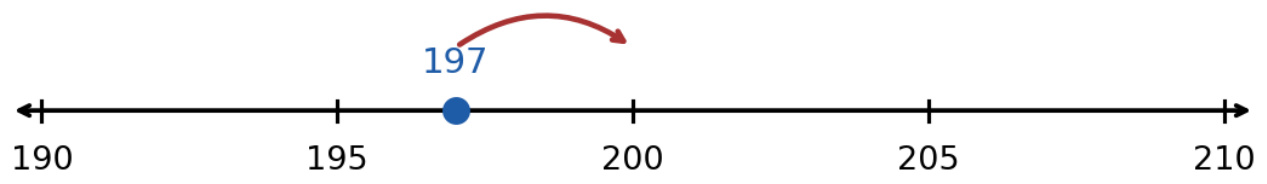
Round each number to the nearest ten: 48 rounds to 50, 31 rounds to 30.

Add the rounded numbers: 50 + 30 = 80

So about 80; the exact sum, 79, is close, which checks out.

EXAMPLE 2

Q Estimate 197 × 4 by rounding



SOLUTION

Round 197 to the nearest hundred: 200

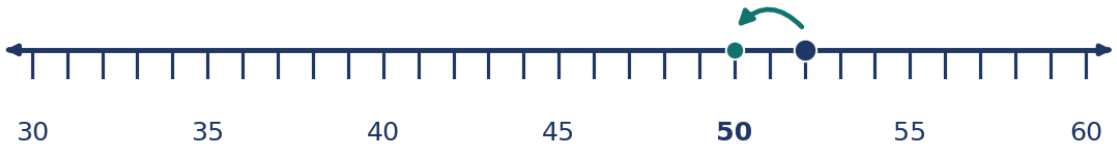
Multiply mentally: 200 × 4 = 800

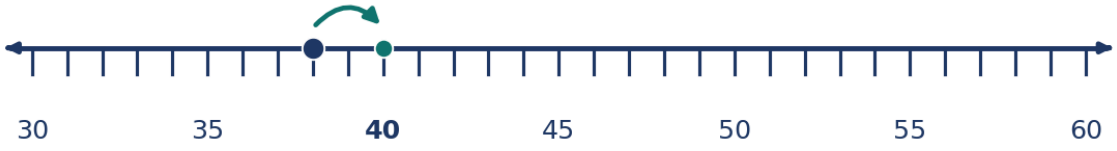
So about 800; the exact product, 788, is close.

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Practice questions

1 You buy two shirts for $52 and $38. Round each price to the nearest ten, then estimate the total.





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2 A jacket costs $89 and you have a $41 voucher. Round each amount to the nearest ten, then estimate how much you pay.





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3 A box holds 19 chocolates and you buy 5 boxes. Round 19 to the nearest ten, then estimate how many chocolates you have.



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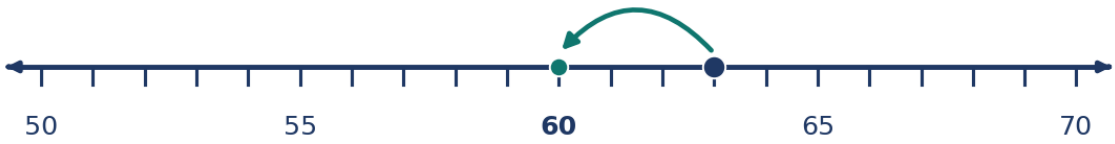
4 A shop has 298 tickets and sells 51 of them. Round 298 to the nearest hundred and 51 to the nearest ten, then estimate how many are left.





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5 A pack has 63 pens. You buy 4 packs and give away 50 pens. Round 63 to the nearest ten, then estimate how many pens you have left.



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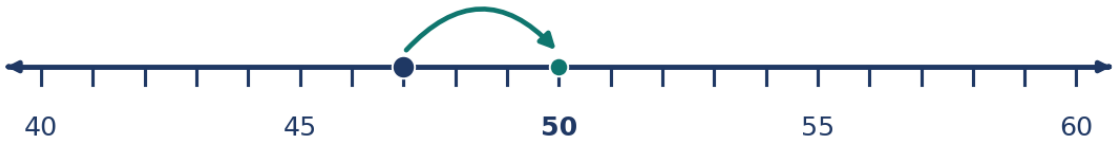
6 A shop has 412 tickets and sells 198 of them. Round each number to the nearest hundred, then estimate how many are left.





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7 An estimate says 47 × 3 is about 120. Is that a good estimate? Answer yes or no.



A Yes

B No

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8 **A school has 505 students in one building and 295 in another. Round each number to the nearest hundred, then estimate how many students there are in all.**

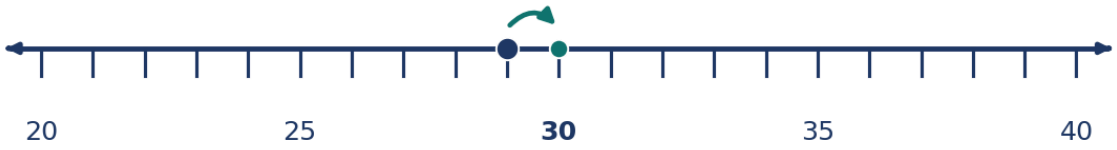


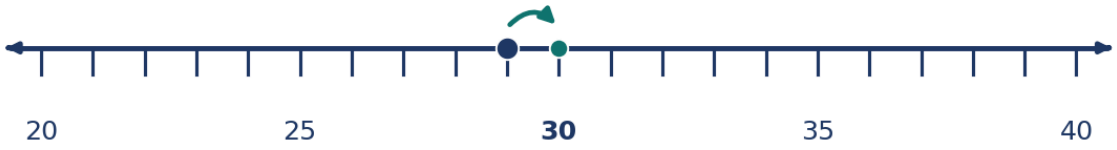


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9 A garden has 29 rows with 29 plants in each row. Round 29 to the nearest ten, then estimate how many plants there are.





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10 A printer prints 197 pages an hour and runs for 4 hours. Round 197 to the nearest hundred, then estimate how many pages it prints.



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ANSWER KEY

1. 90

2. 50

3. 100

4. 250

5. 190

6. 200

7. No

8. 800

9. 900

10. 800

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