Adding and Subtracting Mentally

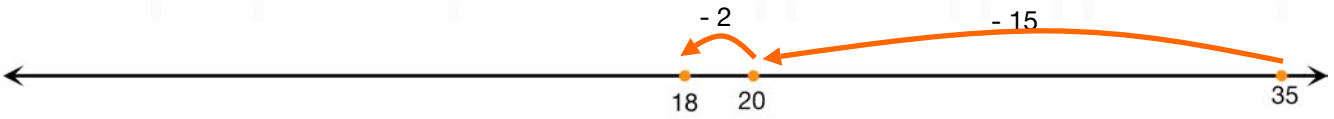
Use What You've Learned
Answers and Explanations

Use mental math to solve the following problems. Use an open number line to help explain your reasoning.

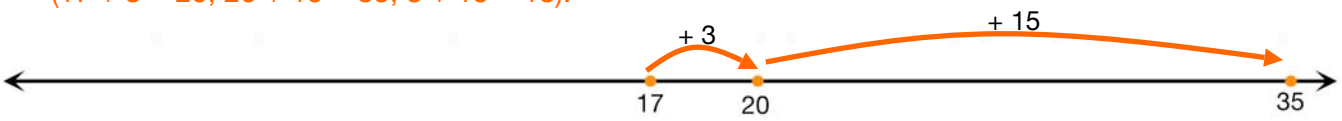
There are many ways to solve the problems using mental math. The following solutions show one or two ways to think about each problem. An open number line is used to illustrate each strategy.

1. Pablo has 35 coins. 17 of the coins are pennies and the rest are dimes. How many dimes does Pablo have?
   To solve this problem, mentally compute 35 – 17.

   Strategy 1: Subtract in Parts
   Subtracting 17 is the same as subtracting 15, then subtracting two (35 – 15 = 20, 20 – 2 = 18).



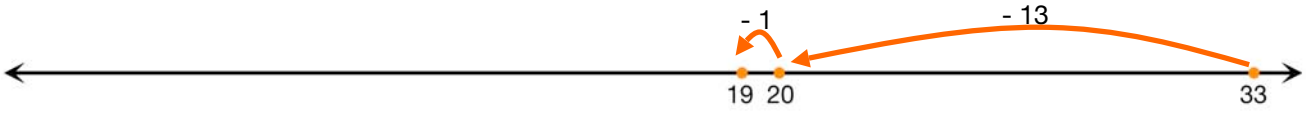
   Strategy 2: Subtract by Adding Up
   Start with 17 and add up to 35. The sum of the numbers you add to 17 is the answer (17 + 3 = 20, 20 + 15 = 35, 3 + 15 = 18).



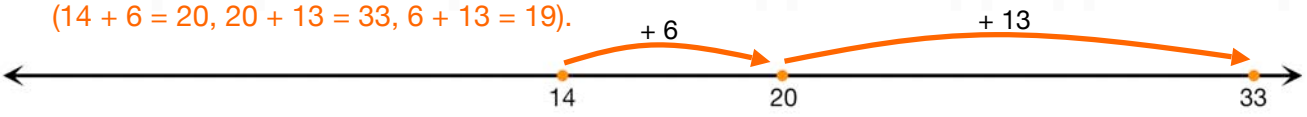
   Pablo has 18 dimes.

2. Carissa is starting an insect collection. On Monday, she added 33 insects to her collection. On Tuesday, she added 14 fewer insects than she did on Monday. How many insects did she add on Tuesday?
   To solve this problem, mentally compute 33 – 14.

   Strategy 1: Subtract in Parts
   Subtracting 14 is the same as subtracting 13, then subtracting one (33 – 13 = 20, 20 – 1 = 19).



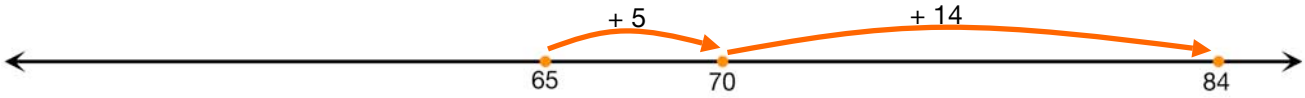
   Strategy 2: Subtract by Adding Up
   Start with 14 and add up to 33. The sum of the numbers you add to 14 is the answer (14 + 6 = 20, 20 + 13 = 33, 6 + 13 = 19).



   Carissa added 19 insects to her collection on Tuesday.

3. Tammy has 19 more students in her grade at school than her brother, Tim, has in his grade. There are 65 students in Tim's grade. How many students are in Tammy's grade?
To solve this problem, mentally compute 65 +19.

Strategy 1: Add in Parts
Adding 19 is the same as adding 5, then adding 14 (65 + 5 = 70, 70 + 14 = 84).

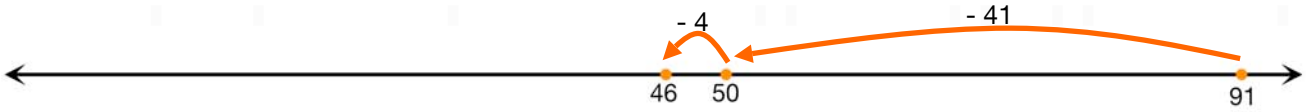


Strategy 2: Add a Multiple of 10 and Subtract
Adding 19 is the same as adding 20, then subtracting one (65 + 20 = 85, 85 – 1 = 84).

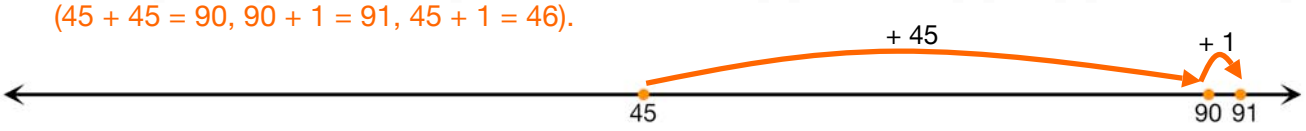
There are 84 students in Tammy's grade.

4. Jillian had $91 in her savings account. She spent $45 on a pair of running shoes. How much money does Jillian have left in her savings account?
To solve this problem, mentally compute 91 - 45.

Strategy 1: Subtract in Parts
Subtracting 45 is the same as subtracting 41, then subtracting four (91 - 41 = 50, 50 – 4 = 46).



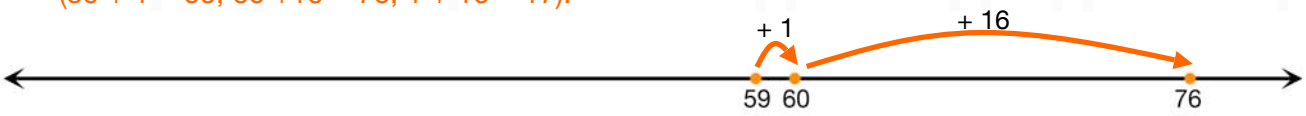
Strategy 2: Subtract by Adding Up
Start with 45 and add up to 91. The sum of the numbers you add to 45 is the answer (45 + 45 = 90, 90 + 1 = 91, 45 + 1 = 46).



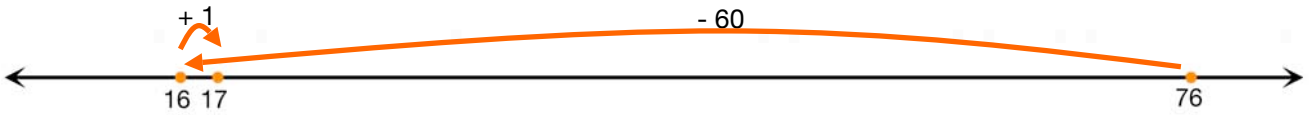
Jillian has $46 left in her savings account.

5. Hillary's summer camp was 59 miles from her home. Her brother, Josh, attended a different summer camp that was 76 miles from their home. How much farther from home was Josh's camp than Hillary's camp?
To solve this problem, mentally compute 76 - 59.

Strategy 1: Subtract by Adding Up
Start with 59 and add up to 76. The sum of the numbers you add to 59 is the answer (59 + 1 = 60, 60 +16 = 76, 1 + 16 = 17).



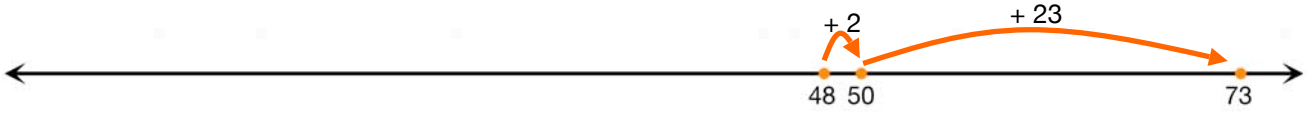
Strategy 2: Subtract a Multiple of 10 and Add
Subtracting 59 is the same as subtracting 60, then adding one (76 - 60 = 16, 16 + 1 = 17).



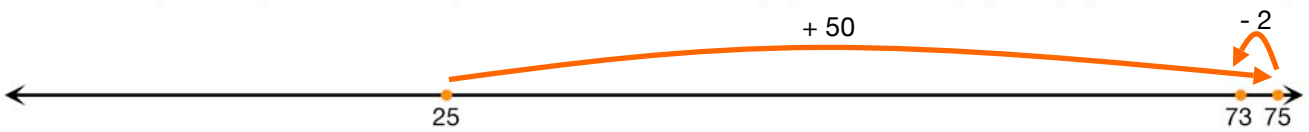
Josh's camp was 17 miles farther from home than Hillary's camp.

6. Alex and his mother made cookies for a party at school. Alex took 25 of the cookies to school and left 48 at home. How many cookies did they bake?
To solve this problem, mentally compute 48 + 25.

Strategy 1: Add in Parts
Adding 25 is the same as adding 2, then adding 23 (48 + 2 = 50, 50 + 23 = 73).



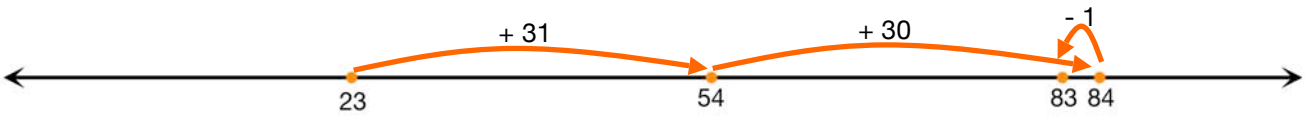
Strategy 2: Add a Multiple of 10 and Subtract
Changing the order that you add two numbers does not change the answer (48 + 25 = 25 + 48).
Adding 48 is the same as adding 50, then subtracting two (25 + 50 = 75, 75 – 2 = 73).



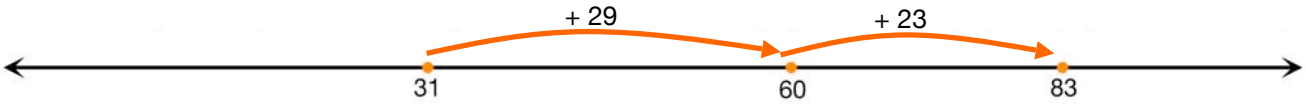
Alex and his mother baked 73 cookies.

7. Marcus was reading a new fantasy novel. He decided to read one chapter each day. Chapter 1 has 23 pages, Chapter 2 has 31 pages, and Chapter 3 has 29 pages. How many pages will Marcus read in his first 3 days of reading his book?
To solve this problem, mentally compute 23 + 31 + 29.

Strategy 1: Add a Multiple of 10 and Subtract
Add 23 + 31, then add 29. Adding 29 is the same as adding 30, then subtracting one (23 + 31 = 54, 54 + 30 = 84, 84 – 1 = 83).



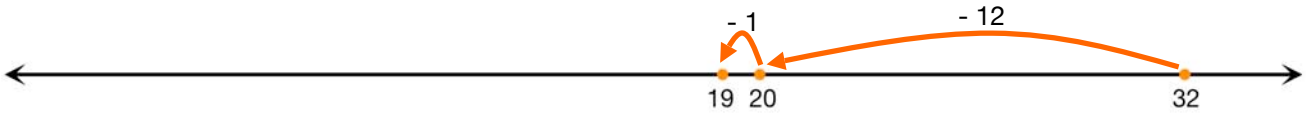
Strategy 2: Change the order of the addends
Changing the order that you add three numbers does not change the answer (31 + 29 = 60, 60 + 23 = 83).



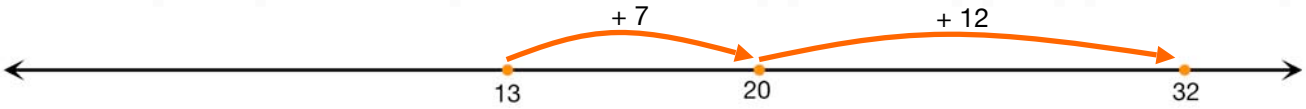
Marcus read the first 83 pages of his book.

8. Amy likes to play darts. She scored 13 with her first throw, 25 with her second throw, and 32 with her third throw. How many more points did she score on her third throw than her first throw?
To solve this problem, mentally compute 32 – 13.

Strategy 1: Subtract in Parts
Subtracting 13 is the same as subtracting 12, then subtracting one (32 – 12 = 20, 20 – 1 = 19).



Strategy 2: Subtract by Adding Up
Start with 13 and add up to 32. The sum of the numbers you add to 13 is the answer (13 + 7 = 20, 20 + 12 = 32, 7 + 12 = 19).



Amy scored 19 more points on her third throw than her first throw.