

Name _____

1. What is the sum of $123 + 247 + 108$? **1 point**

478

2. Find a reasonable estimate for the sum of 109 and 168. Select all that apply. **1 point**

- $100 + 200 = 300$
 $150 + 150 = 300$
 $110 + 170 = 280$
 $105 + 165 = 270$
 $120 + 180 = 300$

3. Add $473 + 102$ mentally. Which of the following should you do first to find the sum? **1 point**

- (A) Add 2 to 473 and add 2 to 102.
 (B) Subtract 3 from 473 and add 2 to 102.
 (C) Add 2 to 473 and subtract 2 from 102.
 (D) Subtract 3 from 473 and subtract 2 from 102.

4. Estimate the difference of 825 and 213. Explain your estimate. **2 points**

Sample answer:
 $830 - 210 = 620$;
 I rounded 825 to 830 and 213 to 210.

5. Look at the sums in the light gray shaded row and column. Look at the addends. What pattern do you see? Explain why this pattern is always true. **2 points**

+	0	1	2	3	4	5
0	0	1	2	3	4	5
1	1	2	3	4	5	6
2	2	3	4	5	6	7
3	3	4	5	6	7	8
4	4	5	6	7	8	9
5	5	6	7	8	9	10

Sample answer: The same sums are in the light gray row and column. This is because the sum of any two numbers is the same no matter which number comes first. This is known as the Commutative Property.

6. Use mental math to add 526 and 213. Which of these shows how to break apart the numbers into hundreds, tens, and ones? **1 point**

- (A) Break 526 into $500 + 20 + 6$. Break 213 into $200 + 13$.
 (B) Break 526 into $500 + 20 + 6$. Break 213 into $200 + 10 + 3$.
 (C) Break 526 into $500 + 26$. Break 213 into $200 + 10 + 3$.
 (D) Break 526 into $500 + 26 + 6$. Break 213 into $200 + 13 + 3$.

7. Use mental math to find $436 - 238$. **1 point**

Sample answer:

$$238 - 2 = 236$$

$$436 - 236 = 200$$

$$200 - 2 = 198$$

8. Select all the equations that are true. **1 point**

- $100 + 170 = 170 + 100$
- $0 + 93 = 93$
- $(100 + 10) + 170 = 110 + (10 + 170)$
- $32 + (4 + 115) = (32 + 4) + 115$
- $43 + 0 = 0$

9. Look at the table.

A	325
B	296
C	291
D	312

Write the letters A, B, C, and D above the number line to show each number rounded to the nearest ten. **1 point**



10. Use the addition work shown.

$$\begin{array}{r} 183 \\ + 45 \\ \hline 228 \end{array}$$

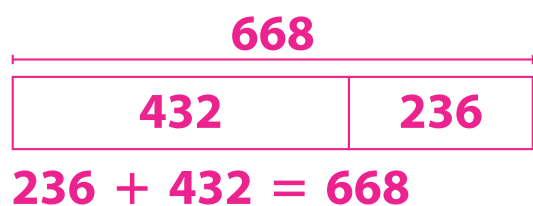
Which strategy shows a way to check the work using inverse operations? **1 point**

- (A) Subtract 45 from 183.
- (B) Add 228 and 45.
- (C) Subtract 45 from 228.
- (D) Add 228 and 183.

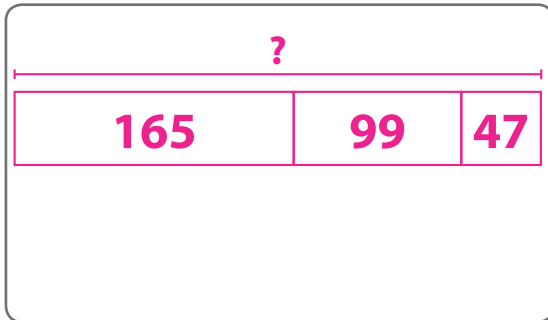
11. Estimate the sum of 320 and 490 by rounding to the nearest hundred. Explain your estimate. **2 points**

Sample answer:
 $300 + 500 = 800$;
I rounded 320 to 300 and 490 to 500.

12. What addition equation can be used to check the answer for $668 - 432 = 236$? Draw a bar diagram to show how the numbers in this problem are related. **2 points**



13. Find the sum of 165, 99, and 47.
- A. Draw a bar diagram that represents the problem. **1 point**



- B. What is the first step you would do to solve this problem using mental math? **1 point**

Sample answer: First I find the sum of 165 and 99. 99 is 1 less than 100. So $165 + 99$ is 1 less than $165 + 100$. The sum is 264.

14. Subtract $387 - 103$ mentally. First subtract 3 from 103 to get 100. What should the next step be? What is the difference? **1 point**
- (A) Add 3 to 387. The difference is 287.
 (B) Add 100 to 387. The difference is 487.
 (C) Subtract 3 from 387. The difference is 284.
 (D) Subtract 3 from 387. The difference is 287.

15. Round each number on the left to the nearest hundred. Select the appropriate answer. **1 point**

	400	700	500	600
732	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
555	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
449	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
498	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

16. Explain how to use mental math to find $530 - 166$. **1 point**

Sample answer: First I subtract 30 from 530 and 166. Then I count on to find $500 - 136$. $4 + 60 + 300 = 364$

17. How can you check the answer for $765 - 321 = 444$? **1 point**

- (A) Subtract $765 - 300 = 465$.
- (B) Add $321 + 444 = 765$.
- (C) Add $300 + 444 = 744$.
- (D) Subtract $444 - 321 = 123$.

18. Consider the sum of 224, 187, and 352.

- A. Estimate the sum by rounding to the nearest ten. Explain your estimate. **2 points**

Sample answer:
760; I rounded 224 to 220, 187 to 190, and 352 to 350. $220 + 190 + 350 = 760$

- B. What is the difference between the exact sum of 224, 187, and 352 and your estimate? Explain your answer. **2 points**

3; $224 + 187 + 352 = 763$; $763 - 760 = 3$

19. Consider the equation $372 = \underline{\quad} + 48$.

Use a bar diagram to represent the equation. Then solve for the unknown value. **2 points**



324 ; $372 - 48 = 324$