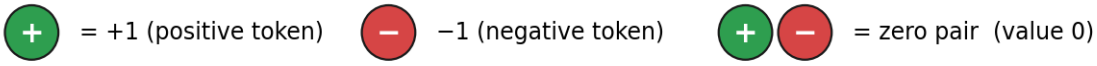
Worksheet 8: Using Tokens to Add and Subtract

Class 6 | Ganita Prakash | Practice Worksheet

Name: _____	Class: _____	Section: _____
Date: _____	Maximum Marks: 20	

The Token Model

- A positive token (green) has value +1 and a negative token (red) has value −1.
- One positive and one negative token together make a ZERO PAIR (value 0). Zero pairs can be removed, or added, without changing the value.
- Addition: put both sets of tokens together, cancel the zero pairs and see what is left.
- Subtraction: start with the first set of tokens and take away the second set. If there are not enough tokens to take away, add the right number of zero pairs first.



A. Using Tokens for Addition [10 × 1 = 10 marks]

Circle the zero pairs in the tokens shown, cancel them, and write how many zero pairs you cancelled and the answer.

1. **(+5) + (+4)**



Zero pairs cancelled: _____ **Answer:** _____

2. **(−3) + (−5)**



Zero pairs cancelled: _____ **Answer:** _____

3. **(+7) + (−3)**



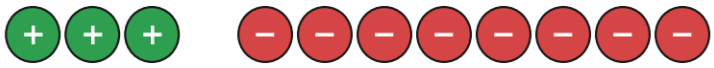
Zero pairs cancelled: _____ **Answer:** _____

4. **(−6) + (+2)**



Zero pairs cancelled: _____ **Answer:** _____

5. **(+3) + (−8)**



Zero pairs cancelled: _____ **Answer:** _____

6. **(−4) + (+9)**



Zero pairs cancelled: _____ **Answer:** _____

7. **(+7) + (−7)**



Zero pairs cancelled: _____ **Answer:** _____

8. **(−7) + (+5)**



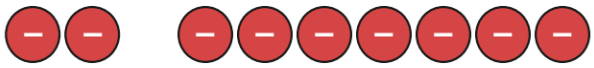
Zero pairs cancelled: _____ **Answer:** _____

9. **(+9) + (−6)**



Zero pairs cancelled: _____ **Answer:** _____

10. **(−2) + (−7)**



Zero pairs cancelled: _____ **Answer:** _____

B. Using Tokens for Subtraction [10 × 1 = 10 marks]

The tokens for the first number are drawn for you. Add zero pairs if you need to, cross out the tokens you take away, and write the answer.

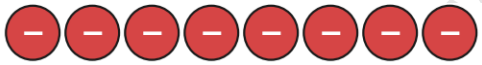
1. **(+11) − (+6)** **(take away +6)**



Work space: add zero pairs here, then cross out the tokens you take away

Zero pairs added: _____ **Answer:** _____

2. **(−8) − (−3)** **(take away −3)**



Work space: add zero pairs here, then cross out the tokens you take away

Zero pairs added: _____ **Answer:** _____

3. **(+4) − (+7)** **(take away +7)**



Work space: add zero pairs here, then cross out the tokens you take away

Zero pairs added: _____ **Answer:** _____

4. **(−3) − (−7)** **(take away −7)**



Work space: add zero pairs here, then cross out the tokens you take away

Zero pairs added: _____ **Answer:** _____

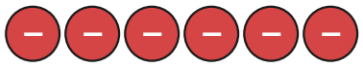
5. **(+5) − (−4)** **(take away −4)**



Work space: add zero pairs here, then cross out the tokens you take away

Zero pairs added: _____ **Answer:** _____

6. **(−6) − (+3)** **(take away +3)**



Work space: add zero pairs here, then cross out the tokens you take away

Zero pairs added: _____ **Answer:** _____

7. **(+2) − (+8)** **(take away +8)**



Work space: add zero pairs here, then cross out the tokens you take away

Zero pairs added: _____ **Answer:** _____

8. **(−5) − (−5)** **(take away −5)**



Work space: add zero pairs here, then cross out the tokens you take away

Zero pairs added: _____ **Answer:** _____

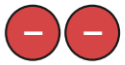
9. **(+3) − (−7)** **(take away −7)**



Work space: add zero pairs here, then cross out the tokens you take away

Zero pairs added: _____ **Answer:** _____

10. **(−2) − (+6)** **(take away +6)**



Work space: add zero pairs here, then cross out the tokens you take away

Zero pairs added: _____ **Answer:** _____

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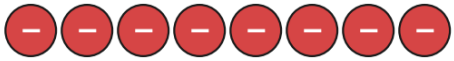
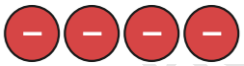
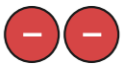
ANSWER KEY

Using Tokens to Add and Subtract

A. Using Tokens for Addition

Question	Working and answer
1. (+5) + (+4)	No zero pairs. All 9 tokens are positive. **Answer: +9** Tokens left: 
2. (−3) + (−5)	No zero pairs. All 8 tokens are negative. **Answer: −8** Tokens left: 
3. (+7) + (−3)	3 zero pairs cancel. Left: 4 positive tokens. **Answer: +4** Tokens left: 
4. (−6) + (+2)	2 zero pairs cancel. Left: 4 negative tokens. **Answer: −4** Tokens left: 
5. (+3) + (−8)	3 zero pairs cancel. Left: 5 negative tokens. **Answer: −5** Tokens left: 
6. (−4) + (+9)	4 zero pairs cancel. Left: 5 positive tokens. **Answer: +5** Tokens left: 
7. (+7) + (−7)	7 zero pairs cancel. Left: no tokens (value 0). **Answer: 0**
8. (−7) + (+5)	5 zero pairs cancel. Left: 2 negative tokens. **Answer: −2** Tokens left: 
9. (+9) + (−6)	6 zero pairs cancel. Left: 3 positive tokens. **Answer: +3** Tokens left: 
10. (−2) + (−7)	No zero pairs. All 9 tokens are negative. **Answer: −9** Tokens left: 

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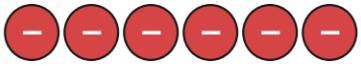
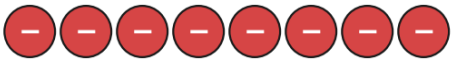
B. Using Tokens for Subtraction

Question	Working and answer
1. (+11) − (+6)	Start with 11 positive tokens. No zero pairs are needed. Take away 6 positive tokens. Left: 5 positive tokens. **Answer: +5** Tokens left: 
2. (−8) − (−3)	Start with 8 negative tokens. No zero pairs are needed. Take away 3 negative tokens. Left: 5 negative tokens. **Answer: −5** Tokens left: 
3. (+4) − (+7)	Start with 4 positive tokens. Add 3 zero pairs. Take away 7 positive tokens. Left: 3 negative tokens. **Answer: −3** Tokens left: 
4. (−3) − (−7)	Start with 3 negative tokens. Add 4 zero pairs. Take away 7 negative tokens. Left: 4 positive tokens. **Answer: +4** Tokens left: 
5. (+5) − (−4)	Start with 5 positive tokens. Add 4 zero pairs. Take away 4 negative tokens. Left: 9 positive tokens. **Answer: +9** Tokens left: 
6. (−6) − (+3)	Start with 6 negative tokens. Add 3 zero pairs. Take away 3 positive tokens. Left: 9 negative tokens. **Answer: −9** Tokens left: 
7. (+2) − (+8)	Start with 2 positive tokens. Add 6 zero pairs. Take away 8 positive tokens. Left: 6 negative tokens. **Answer: −6** Tokens left: 
8. (−5) − (−5)	Start with 5 negative tokens. No zero pairs are needed. Take away 5 negative tokens. Left: no tokens (value 0). **Answer: 0**
9. (+3) − (−7)	Start with 3 positive tokens. Add 7 zero pairs. Take away 7 negative tokens. Left: 10 positive tokens. **Answer: +10** Tokens left: 
10. (−2) − (+6)	Start with 2 negative tokens. Add 6 zero pairs. Take away 6 positive tokens. Left: 8 negative tokens. **Answer: −8** Tokens left: 

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