TOPIC 1: INTEGERS

A. What is an integer?

Any natural number (1, 2, 3, 4, 5,…), its opposite (-1,-2, -3, -4, -5,…), or zero (0). (Integers are useful for problems involving "below normal," debts, "below sea level," etc.)

Problems 1-10: Identify each number as an integer (I) or not an integer (NI):

1. 367
2. -4.4
3. $2\frac{1}{2}$
4. –1010
5. $\sqrt{100}$
6. 0
7. $-\frac{2}{3}$
8. 0.027
9. $\frac{1}{2}$
10. 2^3

Problems 11-14: Write the opposite of each integer:

11. 42
12. –3
13. 0
14. -4^3

Answers

1. I
2. NI
3. NI
4. I
5. I
6. I
7. NI
8. NI
9. NI
10. I
11. –42
12. 3
13. 0
14. 64

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Problems 15-19: Choose the greater:

15. 5, –10
16. 5,–5
17. 5, 0
18. –5, 0
19. –5,–10

20. What is the result of adding an integer and its opposite?
21. What number is its own opposite?

Answers

15. 5
16. 5
17. 5
18. 0
19. –5
20. zero
21. zero

B. Absolute Value:

Absolute value is used for finding distance, explaining addition of integers, etc.

The absolute value of a positive number or zero is itself. The absolute value of a negative number is its opposite.

Problems 22-26: Choose the integer with the greater absolute value:

22. 4 or –3
23. –4 or 3
24. 3 or –3
25. 3 or 0
26. – 3 or 0

Answers

22. 4
23. –4
24. both same
25. 3
26. –3

C. Adding, subtracting, multiplying and dividing integers:

To add two integers:

Both positive: add as natural numbers:
example: Add 4 and 3: $4 + 3 = 7$

Both negative: add as though positive; make the result negative:

example: Add –4 and –3:
Treat as positive and add: $4 + 3 = 7$.
The answer is –7 because it must be negative.

One positive, one negative: treat each as positive, subtract, make the answer sign of the one with the greater absolute value:

example: Add –4 and 3: $4 - 3 = 1$; the answer is –1 because –4 has the greater absolute value.

example: Add 4 and –3: $4 - 3 = 1$; the answer is 1 because 4 has the greater absolute value.

Problems 27-33: Add the two integers:

27. 4 and –3 (This means $(4) + (-3)$)
28. 4 and 3
29. –4 and –3
30. 4 and 0
31. –4 and 3
32. 16 and –7
33. –3 and 0

Answers

27. 1
28. 7
29. –7
30. 4
31. –1
32. 9
33. –3