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Chapter 1 :

Integers and Number Theory

Topics that you will practice in this chapter:

- ✓ Rounding
- ✓ Rounding and Estimates
- ✓ Adding and Subtracting Integers
- ✓ Multiplying and Dividing Integers
- ✓ Order of Operations
- ✓ Ordering Integers and Numbers
- ✓ Integers and Absolute Value
- ✓ Factoring Numbers
- ✓ Greatest Common Factor (GCF)
- ✓ Least Common Multiple (LCM)
- ✓ Sets

“Wherever there is number, there is beauty.” –Proclus

Rounding

 **Round each number to the nearest ten.**

1) $42 = \underline{\quad}$

5) $19 = \underline{\quad}$

9) $48 = \underline{\quad}$

2) $88 = \underline{\quad}$

6) $25 = \underline{\quad}$

10) $81 = \underline{\quad}$

3) $24 = \underline{\quad}$

7) $93 = \underline{\quad}$

11) $58 = \underline{\quad}$

4) $57 = \underline{\quad}$

8) $71 = \underline{\quad}$

12) $87 = \underline{\quad}$

 **Round each number to the nearest hundred.**

13) $198 = \underline{\quad}$

17) $321 = \underline{\quad}$

21) $580 = \underline{\quad}$

14) $387 = \underline{\quad}$

18) $433 = \underline{\quad}$

22) $868 = \underline{\quad}$

15) $816 = \underline{\quad}$

19) $579 = \underline{\quad}$

23) $480 = \underline{\quad}$

16) $101 = \underline{\quad}$

20) $825 = \underline{\quad}$

24) $287 = \underline{\quad}$

 **Round each number to the nearest thousand.**

25) $1,382 = \underline{\quad}$

29) $9,099 = \underline{\quad}$

33) $52,866 = \underline{\quad}$

26) $3,420 = \underline{\quad}$

30) $22,980 = \underline{\quad}$

34) $85,190 = \underline{\quad}$

27) $4,254 = \underline{\quad}$

31) $45,188 = \underline{\quad}$

35) $70,990 = \underline{\quad}$

28) $6,861 = \underline{\quad}$

32) $16,808 = \underline{\quad}$

36) $26,869 = \underline{\quad}$

Rounding and Estimates

 Estimate the sum by rounding each number to the nearest ten.

1) $13 + 22 = \underline{\hspace{2cm}}$

5) $368 + 249 = \underline{\hspace{2cm}}$

2) $71 + 23 = \underline{\hspace{2cm}}$

6) $330 + 903 = \underline{\hspace{2cm}}$

3) $61 + 58 = \underline{\hspace{2cm}}$

7) $471 + 293 = \underline{\hspace{2cm}}$

4) $56 + 85 = \underline{\hspace{2cm}}$

8) $1,950 + 2,655 = \underline{\hspace{2cm}}$

 Estimate the product by rounding each number to the nearest ten.

9) $32 \times 71 = \underline{\hspace{2cm}}$

13) $42 \times 76 = \underline{\hspace{2cm}}$

10) $12 \times 33 = \underline{\hspace{2cm}}$

14) $63 \times 34 = \underline{\hspace{2cm}}$

11) $31 \times 83 = \underline{\hspace{2cm}}$

15) $19 \times 31 = \underline{\hspace{2cm}}$

12) $19 \times 11 = \underline{\hspace{2cm}}$

16) $59 \times 71 = \underline{\hspace{2cm}}$

 Estimate the sum or product by rounding each number to the nearest ten.

$$17) \begin{array}{r} 29 \\ \times 12 \\ \hline \end{array}$$

$$19) \begin{array}{r} 48 \\ + 82 \\ \hline \end{array}$$

$$21) \begin{array}{r} 37 \\ \times 14 \\ \hline \end{array}$$

$$18) \begin{array}{r} 37 \\ \times 26 \\ \hline \end{array}$$

$$20) \begin{array}{r} 65 \\ + 44 \\ \hline \end{array}$$

$$22) \begin{array}{r} 71 \\ + 32 \\ \hline \end{array}$$

Adding and Subtracting Integers **Find each sum.**

1) $14 + (-6) =$

6) $30 + (-14) + 8 =$

2) $(-13) + (-20) =$

7) $40 + (-10) + (-14) + 17 =$

3) $5 + (-28) =$

8) $(-15) + (-20) + 13 + 35 =$

4) $50 + (-12) =$

9) $40 + (-20) + (38 - 29) =$

5) $(-7) + (-15) + 3 =$

10) $28 + (-12) + (30 - 12) =$

 **Find each difference.**

11) $(-18) - (-7) =$

19) $62 - (28 + 17) - (-15) =$

12) $25 - (-14) =$

20) $58 - (-23) - (-31) =$

13) $(-20) - 36 =$

21) $19 - (-8) - (-13) =$

14) $34 - (-19) =$

22) $(19 - 24) - (-14) =$

15) $51 - (30 - 21) =$

23) $27 - 33 - (-21) =$

16) $17 - (5) - (-24) =$

24) $58 - (32 + 24) - (-9) =$

17) $(35 + 20) - (-46) =$

25) $36 - (-30) + (-17) =$

18) $48 - 16 - (-8) =$

26) $27 - (-42) + (-31) =$

Multiplying and Dividing Integers

 Find each product.

1) $(-9) \times (-5) =$

6) $(14 - 3) \times (-8) =$

2) $(-3) \times 9 =$

7) $12 \times (-9) \times (-3) =$

3) $8 \times (-12) =$

8) $(140 + 10) \times (-2) =$

4) $(-7) \times (-20) =$

9) $10 \times (-12 + 8) \times 3 =$

5) $(-3) \times (-5) \times 6 =$

10) $(-8) \times (-5) \times (-10) =$

 Find each quotient.

11) $42 \div (-7) =$

19) $221 \div (-13) =$

12) $(-48) \div (-6) =$

20) $(-126) \div (6) =$

13) $(-40) \div (-8) =$

21) $(-161) \div (-7) =$

14) $54 \div (-2) =$

22) $-266 \div (-14) =$

15) $152 \div 19 =$

23) $(-120) \div (-4) =$

16) $(-144) \div (-12) =$

24) $270 \div (-18) =$

17) $180 \div (-10) =$

25) $(-208) \div (-8) =$

18) $(-312) \div (-12) =$

26) $(135) \div (-15) =$

Order of Operations

 Evaluate each expression.

1) $7 + (5 \times 4) =$

11) $(-7) + (12 \times 3) + 11 =$

2) $14 - (3 \times 6) =$

12) $(8 \times 5) - (24 \div 6) =$

3) $(19 \times 4) + 16 =$

13) $(7 \times 6 \div 3) - (12 + 9) =$

4) $(16 - 7) - (8 \times 2) =$

14) $(13 + 5 - 14) \times 3 - 2 =$

5) $27 + (18 \div 3) =$

15) $(20 - 14 + 30) \times (64 \div 4) =$

6) $(18 \times 8) \div 6 =$

16) $32 + (28 - (36 \div 9)) =$

7) $(32 \div 4) \times (-2) =$

17) $(7 + 6 - 4 - 7) + (15 \div 5) =$

8) $(9 \times 4) + (32 - 18) =$

18) $(85 - 20) + (20 - 18 + 7) =$

9) $24 + (4 \times 3) + 7 =$

19) $(20 \times 2) + (14 \times 3) - 22 =$

10) $(36 \times 3) \div (2 + 2) =$

20) $18 + 5 - (30 \times 3) + 20 =$

Ordering Integers and Numbers

 Order each set of integers from least to greatest.

1) 8, -10, -5, -3, 4 _____, _____, _____, _____, _____, _____

2) -10, -18, 6, 14, 27 _____, _____, _____, _____, _____, _____

3) 15, -8, -21, 21, -23 _____, _____, _____, _____, _____, _____

4) -14, -40, 23, -12, 47 _____, _____, _____, _____, _____, _____

5) 59, -54, 32, -57, 36 _____, _____, _____, _____, _____, _____

6) 68, 26, -19, 47, -34 _____, _____, _____, _____, _____, _____

 Order each set of integers from greatest to least.

7) 18, 36, -16, -18, -10 _____, _____, _____, _____, _____, _____

8) 27, 34, -12, -24, 94 _____, _____, _____, _____, _____, _____

9) 50, -21, -13, 42, -2 _____, _____, _____, _____, _____, _____

10) 37, 46, -20, -16, 86 _____, _____, _____, _____, _____, _____

11) -18, 88, -26, -59, 75 _____, _____, _____, _____, _____, _____

12) -65, -30, -25, 3, 14 _____, _____, _____, _____, _____, _____

Integers and Absolute Value

 **Write absolute value of each number.**

1) $|-2| =$

11) $|-11|$

2) $|-27| =$

12) $|88| =$

3) $|-20| =$

13) $|0| =$

4) $|14| =$

14) $|79| =$

5) $|6| =$

15) $|-32| =$

6) $|-55| =$

16) $|-17| =$

7) $|16| =$

17) $|42| =$

8) $|2| =$

18) $|-46| =$

9) $|54| =$

19) $|1| =$

10) $|-4| =$

20) $|-40| =$

 **Evaluate the value.**

21) $|-5| - \frac{|-21|}{7} =$

25) $|4 \times (-5)| + \frac{|-40|}{5} =$

22) $14 - |3 - 15| - |-4| =$

26) $\frac{|-45|}{9} \times \frac{|-24|}{12} =$

23) $\frac{|-32|}{4} \times |-4| =$

27) $|-12 + 8| \times \frac{|-7 \times 7|}{7}$

24) $\frac{|7 \times (-3)|}{7} \times \frac{|-19|}{3} =$

28) $\frac{|-11 \times 2|}{4} \times |-16| =$

Factoring Numbers

 **List all positive factors of each number.**

1) 9

9) 28

17) 50

2) 16

10) 98

18) 62

3) 24

11) 14

19) 95

4) 30

12) 54

20) 64

5) 26

13) 55

21) 70

6) 46

14) 18

22) 45

7) 20

15) 63

23) 22

8) 68

16) 34

24) 65

Greatest Common Factor

 Find the GCF for each number pair.

1) 6, 2

9) 12, 18

17) 42, 14

2) 4, 5

10) 4, 36

18) 16, 40

3) 3, 12

11) 6, 10

19) 9, 2, 3

4) 7, 3

12) 28, 52

20) 5, 15, 10

5) 5, 10

13) 25, 10

21) 7, 9, 2

6) 8, 48

14) 22, 24

22) 16, 64

7) 6, 18

15) 9, 54

23) 30, 48

8) 9, 15

16) 8, 54

24) 36, 63

Least Common Multiple

 Find the LCM for each number pair.

1) 6, 9

9) 7, 21

17) 12, 13

2) 15, 45

10) 8, 20

18) 22, 11

3) 16, 40

11) 15, 25

19) 36, 20

4) 12, 36

12) 7, 9

20) 15, 35

5) 18, 27

13) 4, 11

21) 18, 81

6) 14, 42

14) 8, 28

22) 30, 54

7) 6, 30

15) 28, 56


23) 18, 45

8) 8, 56

16) 40, 50

24) 75, 25

Sets

 Given $A = \{3, 4, 5, 7, 13\}$, $B = \{1, 6, 9, 10\}$, and $C = \{4, 6, 7, 10\}$, find:

1) $A \cup C$ _____

6) $A \cap C$ _____

2) $A \cup B$ _____

7) $(C \cup B) \cup A$ _____

3) $B \cup C$ _____

8) $(A \cup C) \cap B$ _____

4) $C \cap B$ _____

9) $(C \cap B) \cap A$ _____

5) $A \cap B$ _____

10) $(B \cup A) \cap C$ _____

 Refer to the diagram below to find each set.

11) $A \cup B$ _____

12) $A \cup C$ _____

13) $C \cup B$ _____

14) $A \cap C$ _____

15) $B \cap C$ _____

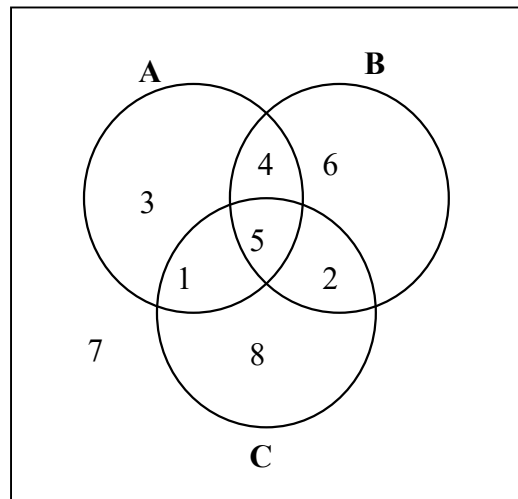
16) $B \cap A$ _____

17) $(A \cup C) \cup B$ _____

18) $(C \cup B) \cap A$ _____

19) $(A \cap B) \cap C$ _____

20) $(A \cup C) \cap B$ _____



Answers of Worksheets**Rounding**

- | | | | |
|-------|---------|-----------|------------|
| 1) 40 | 10) 80 | 19) 600 | 28) 7,000 |
| 2) 90 | 11) 60 | 20) 800 | 29) 9,000 |
| 3) 20 | 12) 90 | 21) 600 | 30) 23,000 |
| 4) 60 | 13) 200 | 22) 900 | 31) 45,000 |
| 5) 20 | 14) 400 | 23) 500 | 32) 17,000 |
| 6) 30 | 15) 800 | 24) 300 | 33) 53,000 |
| 7) 90 | 16) 100 | 25) 1,000 | 34) 85,000 |
| 8) 70 | 17) 300 | 26) 3,000 | 35) 71,000 |
| 9) 50 | 18) 400 | 27) 4,000 | 36) 27,000 |

Rounding and Estimates

- | | | | |
|----------|-----------|-----------|---------|
| 1) 30 | 7) 760 | 13) 3,200 | 19) 130 |
| 2) 90 | 8) 4,610 | 14) 1,800 | 20) 110 |
| 3) 120 | 9) 2,100 | 15) 600 | 21) 400 |
| 4) 150 | 10) 300 | 16) 4,200 | 22) 100 |
| 5) 620 | 11) 2,400 | 17) 300 | |
| 6) 1,230 | 12) 200 | 18) 1,200 | |

Adding and Subtracting Integers

- | | | | |
|--------|---------|---------|--------|
| 1) 8 | 8) 13 | 15) 42 | 22) 9 |
| 2) -33 | 9) 29 | 16) 36 | 23) 15 |
| 3) -23 | 10) 34 | 17) 101 | 24) 11 |
| 4) 38 | 11) -11 | 18) 40 | 25) 49 |
| 5) -19 | 12) 39 | 19) 32 | 26) 38 |
| 6) 24 | 13) -56 | 20) 112 | |
| 7) 33 | 14) 53 | 21) 40 | |

Multiplying and Dividing Integers

- | | | | |
|--------|----------|---------|---------|
| 1) 45 | 6) -88 | 11) -6 | 16) 12 |
| 2) -27 | 7) 324 | 12) 8 | 17) -18 |
| 3) -96 | 8) -300 | 13) 5 | 18) 26 |
| 4) 140 | 9) -120 | 14) -27 | 19) -17 |
| 5) 90 | 10) -400 | 15) 8 | 20) -21 |