

Math 9

Chapter 1 Workbook – Key

Integers Introduction Lesson 1

1. -16-I 7-N,W,I 0-W,I -40-I
2. a) 100 b) -10 c) -20
3. a) -30 b) 56 c) 50 m above sea level d) -42 e) 5 f) 0
4. a) -5 b) -1 c) 2 d) 5
6. a) > b) < c) < d) >
7. -32, -21, -19, -12, 0, 3, 8, 11

Adding and Subtracting Integers

1. a) gain of 40 b) decrease of 40% c) 36 d) gain of 5 degrees
2. a) -7 b) -8 c) 3 d) -14 e) -6 f) -14
3. a) -7 b) 1 c) -16 d) 7 e) -6 f) -18
4. a) -4 b) -10 c) -20 d) -15
5. a) -14 b) 27 c) -7 d) -18 e) -3 f) 0
6. a) -6 b) -12 c) 16 d) -2 e) 10 f) -10
- g) -7 h) 11 i) 0
7. a) -15 b) -16 c) -19 d) -7 e) -23 f) 17
8. a) -9 b) -17 c) 0 d) 2 e) -8 f) 4

What Should You Do If You Are Surrounded...?

JUST WAIT FOR THE MERRY GO ROUND TO STOP AND JUMP OFF

Why Did the Snail have...?

SO EVERYONE WOULD SHOUT "LOOK AT THAT 'S' CAR GO"

Why Did Zelda Name Her Pet...?

IT WASN'T QUITE OLD ENOUGH TO BE A BUCK

Order of Operations

- 2) 18 3) 24 4) 32 5) 57 6) 37 7) 6 8) 2
- 9) 26 10) 33 11) 40 12) 4 13) 23 14) 5 15) 18
- 16) 3 17) 7 18) 12 19) 33 20) 2

Order of Operations PM9

- 1) -3 2) 99 3) 0 4) 97 5) 4 6) 32 7) -3
8) -3 9) 41 10) 11 11) 10 12) 9 13) 36 14) -4
15) 66 16) -4 17) -2 18) $\frac{29}{34}$ 19) 2 20) 5

BONUS: -168

Rational Numbers Intro

1. -5: I, R 2.5: R 0: W, I, R $-3\frac{1}{4}$: R 16: N, W, I, R $\frac{2}{5}$: R
2. A) $-\frac{3}{8}$ B) $\frac{3}{8}$ C) $\frac{1}{2}$ D) $\frac{9}{8}$
3. $\frac{1}{3}, -\frac{5}{7}, 4\frac{2}{5}, \frac{4}{5}, \frac{5}{6}$ 4. $3\frac{2}{3}, 2\frac{5}{8}, -5\frac{2}{3}, 2\frac{4}{11}$ 5. $\frac{13}{5}, \frac{31}{10}, -\frac{11}{7}, -\frac{21}{4}$
6. -0.375, 5.25, 2.07, 1.222... 7. $\frac{7}{2}, -\frac{31}{100}, -1\frac{3}{1000}, \frac{7}{9}$ 8. $\frac{7}{5}$
9. a) < b) < c) = d) < e) = f) >

Adding and Subtracting Fractions

1. a) $\frac{17}{12}$ b) $\frac{11}{35}$ c) $-\frac{11}{24}$ d) $-\frac{19}{24}$ e) $\frac{11}{18}$ f) $-\frac{22}{15}$ g) $-\frac{7}{20}$ h) $\frac{13}{8}$
2. a) $-\frac{11}{12}$ b) $\frac{7}{3}$ c) $-\frac{9}{8}$ d) $-\frac{11}{24}$ e) $\frac{11}{30}$ f) $\frac{11}{8}$ g) $-\frac{1}{12}$ h) 1
3. a) $\frac{91}{12}$ b) $\frac{77}{24}$ c) $-\frac{33}{10}$ d) $-\frac{107}{20}$ e) $-\frac{34}{15}$ f) $-\frac{18}{35}$ g) $-\frac{23}{30}$ h) $\frac{160}{21}$
4. a) $\frac{49}{30}$ b) $-\frac{71}{12}$ c) $\frac{67}{56}$ d) $\frac{63}{4}$ e) $-\frac{49}{12}$ f) $\frac{86}{9}$ g) $\frac{22}{9}$ h) $-\frac{113}{35}$ i) $\frac{167}{33}$
5. a) $-\frac{1}{12}$ b) $\frac{9}{8}$ c) $\frac{5}{24}$ d) $-\frac{17}{40}$ e) $\frac{37}{12}$ f) $-\frac{9}{5}$ g) $-\frac{4}{3}$ h) $-\frac{19}{18}$ i) $\frac{11}{4}$ j) $\frac{193}{350}$

Rational Numbers – Multiply and Divide

1. a) $-\frac{3}{8}$ b) $-\frac{4}{7}$ c) $\frac{2}{5}$ d) $-\frac{1}{3}$ e) -3 f) 4 g) $-\frac{2}{3}$ h) $\frac{15}{2}$ i) $\frac{2}{5}$ j) $-\frac{1}{2}$

2. a) $-\frac{5}{4}$ b) $\frac{1}{3}$ c) $-\frac{1}{3}$ d) $-\frac{3}{10}$ e) $-\frac{1}{5}$ f) $\frac{4}{3}$ g) $-\frac{6}{11}$ h) $\frac{25}{33}$ i) $\frac{5}{9}$ j) $-\frac{21}{8}$

3. a) $\frac{1}{16}$ b) $\frac{5}{21}$ c) $-\frac{9}{2}$ d) $\frac{1}{13}$ e) $-\frac{2}{3}$ f) $-\frac{9}{20}$ g) -2 h) 5 i) 3 j) 3

Fractions – Order of Operations

1. a) $\frac{44}{63}$ b) $\frac{27}{4}$ c) $\frac{11}{50}$

2. a) $-\frac{11}{10}$ b) $-\frac{129}{98}$ c) $-\frac{18}{7}$ d) $-\frac{4}{33}$ e) $-\frac{31}{10}$ f) $\frac{32}{123}$

3. a) $\frac{13}{24}$ b) $\frac{39}{40}$ c) $-\frac{35}{36}$ d) $\frac{6}{7}$ e) $\frac{14}{3}$

PM9 Fractions – Order of Operations

1. a) $\frac{1}{16}$ b) $-\frac{9}{2}$ c) -2 d) $-\frac{2}{3}$ e) -3

2. a) $-\frac{11}{10}$ b) $-\frac{129}{98}$ c) $-\frac{18}{7}$ d) $-\frac{4}{33}$ e) $-\frac{31}{10}$ f) $\frac{32}{123}$

Magic Squares: Fractions

Key is on the second page.

Magic Squares: Fractions

ANSWER KEY

A magic square is a grid of numbers where the values in each of the rows, columns and diagonals adds up to the same sum, known as the "magic number." Use your math skills to fill in each of these magic squares.

The magic number is $15\frac{1}{9}$.

$\frac{4}{9}$	$6\frac{2}{9}$	$6\frac{2}{3}$	$1\frac{7}{9}$	→ $15\frac{1}{9}$	
$5\frac{1}{3}$	$3\frac{1}{9}$	$2\frac{2}{3}$	4	→ $15\frac{1}{9}$	
$3\frac{5}{9}$	$4\frac{8}{9}$	$4\frac{4}{9}$	$2\frac{2}{9}$	→ $15\frac{1}{9}$	
$5\frac{7}{9}$	$\frac{8}{9}$	$1\frac{1}{3}$	$7\frac{1}{9}$	→ $15\frac{1}{9}$	
↙ $15\frac{1}{9}$	↓ $15\frac{1}{9}$	↓ $15\frac{1}{9}$	↓ $15\frac{1}{9}$	↓ $15\frac{1}{9}$	↘ $15\frac{1}{9}$

The magic number is 17.

$6\frac{1}{2}$	4	6	$\frac{1}{2}$
1	$5\frac{1}{2}$	$3\frac{1}{2}$	7
$1\frac{1}{2}$	5	3	$7\frac{1}{2}$
8	$2\frac{1}{2}$	$4\frac{1}{2}$	2

The magic number is $16\frac{1}{4}$.

$2\frac{3}{4}$	$2\frac{1}{2}$	1	$5\frac{3}{4}$	$4\frac{1}{4}$
$4\frac{1}{2}$	3	$1\frac{1}{2}$	$1\frac{1}{4}$	6
$6\frac{1}{4}$	$4\frac{3}{4}$	$3\frac{1}{4}$	$1\frac{3}{4}$	$\frac{1}{4}$
$\frac{1}{2}$	$5\frac{1}{4}$	5	$3\frac{1}{2}$	2
$2\frac{1}{4}$	$\frac{3}{4}$	$5\frac{1}{2}$	4	$3\frac{3}{4}$

The magic number is $41\frac{5}{8}$.

$7\frac{7}{8}$	$8\frac{5}{8}$	$9\frac{3}{8}$	$10\frac{1}{8}$	3	$2\frac{5}{8}$
9	$8\frac{1}{4}$	$10\frac{1}{2}$	$9\frac{3}{4}$	$1\frac{7}{8}$	$2\frac{1}{4}$
$\frac{3}{8}$	$1\frac{1}{8}$	$7\frac{1}{2}$	$7\frac{1}{8}$	$12\frac{3}{8}$	$13\frac{1}{8}$
$1\frac{1}{2}$	$\frac{3}{4}$	$6\frac{3}{8}$	$6\frac{3}{4}$	$13\frac{1}{2}$	$12\frac{3}{4}$
$10\frac{7}{8}$	$11\frac{5}{8}$	$3\frac{3}{8}$	$4\frac{1}{8}$	6	$5\frac{5}{8}$
12	$11\frac{1}{4}$	$4\frac{1}{2}$	$3\frac{3}{4}$	$4\frac{7}{8}$	$5\frac{1}{4}$