Chapter 1 Review

Accelerated 7th Grade Math (6)

Name:_____

1) Evaluate

a. $-12 + 20$

8

b. $10 - -4$

14

c. $-40 + -23$

-63

d. $-5 - -15$

10

e. $-8 - 6$

-14

f. $-5 \bullet -11$

55

g. $9 \div (-3)^2$

$9 \div 9$

1

h. $-40 \div -2$

20

i. $-3^2 - 22$

$-9 - 22 = -31$

j. $-32 + 11$

-21

k. $21 - 40$

~~29~~

-19

l. $-a + 4$
if $a = 7$

$-7 + 4$ -3

m. $-8 - a$
if $a = -8$

$-8 + 8 = 0$

n. $10 - a$
if $a = -12$

$10 - -12$ 22

o. $-a + -6$
if $a = -11$

$+11 + -6$

$11 + -6$ 5

p. $-4 - a$
if $a = |4|$

$-4 - 4 = -8$

q. $-10 \bullet a$
if $a = |-5|$

$-10 \cdot 5 = -50$

r. $-3 \bullet a$
if $a = -|3|$

$-3 \cdot -3$ 9

s. a^2
if $a = -12$

$(-12)^2 = 144$

t. $-16 \div a$
if $a = -2$

$-16 \div -2$ 8

u. $-a + b$
if $a = 4$, $b = 4$

$-4 + 4$ 0

v. $a - b$
if $a = -|-4|$, $b = 4$

$-4 - 4$ -8

w. $-4 + 3 - 6 + 1 + 4$

$-4 - 6 + 3 + 1 + 4$

$-10 + 8$

-2

x. $(-5)^2 = -5 \cdot -5$

25

2) Compute each of the following…

a. $4\frac{1}{2} - 3\frac{6}{7}$

$\frac{9\cdot 7}{2\cdot 7} \quad \frac{27\cdot 2}{7\cdot 2}$

$\frac{63}{14} - \frac{54}{14} = \frac{9}{14}$

b. $-4\frac{1}{2} \bullet 3\frac{2}{3}$

$-\frac{\cancel{9}^{3}}{2} \cdot \frac{11}{\cancel{3}_{1}} = \frac{-33}{2}$

$= -16\frac{1}{2}$

c. $-4\frac{1}{2} \div -3\frac{6}{7}$

$\frac{-9}{2} \div \frac{-27}{7}$

$\frac{\cancel{-9}^{1}}{2} \cdot \frac{7}{\cancel{-27}_{3}} = \frac{-7}{6}$

$= -1\frac{1}{6}$

d. $\frac{4}{5} - 1\frac{2}{3}$

$\frac{4}{5} - \frac{5\cdot 5}{3\cdot 5}$

$\frac{12}{15} - \frac{25}{15} = \frac{-13}{15}$

e. $-1\frac{1}{3} + 3\frac{3}{4}$

$-\frac{4}{3} + \frac{15}{4}$

$-\frac{16}{12} + \frac{45}{12} = \frac{29}{12}$

$= 2\frac{5}{12}$

f. $5 \div 3\frac{4}{7}$

$\frac{5}{1} \cdot \frac{25}{7} = \frac{125}{7}$

$17\frac{6}{7}$

3) Every day during the summer, Ely spends $\frac{3}{4}$ of an hour playing soccer, 1 ½ hours dancing, and 7 hours making funny faces to people in cars at stop lights. What is the total number of hours that Ely does these 3 activities each day?

$\frac{3}{4} + 1\frac{1}{2} + 7$

$\frac{3}{4} + \frac{3}{2} + \frac{7}{1} = \frac{3}{4} + \frac{6}{4} + \frac{28}{4} = \frac{37}{4} = 9\frac{1}{4}$ hours

4) Ethan wanted to kick his soccer ball $\frac{3}{4}$ of the way across the field. On his first try, he kicked it $\frac{7}{16}$ of the way. How much further did he have to go to reach his goal?

$\frac{3\cdot 4}{4\cdot 4} - \frac{7}{16}$

$\frac{12}{16} - \frac{7}{16} = \boxed{\frac{5}{16} \text{ of the way}}$

5) Mr Moundros has $\frac{7}{8}$ of a pizza left, how many $\frac{1}{16}$ can he cut from what he has?

$\frac{7}{8} \div \frac{1}{16}$

$\frac{7}{\cancel{8}_{1}} \cdot \frac{\cancel{16}^{2}}{1} = \frac{14}{1} = 14$ pieces

6) Fill in the table below...

Fraction	Decimal	Percent
$\frac{3}{5}$	0.6	60%
$\frac{7}{100}$	0.07	7%
$\frac{54}{100} = \frac{27}{50}$	.54	54%
$\frac{2}{3}$	$0.\overline{6}$	$66.\overline{6}\%$
$\frac{9}{100}$	.09	9%
$\frac{649}{1000}$	0.649	64.9%
$\frac{5}{1}$	5.0	500%

Evaluate

7. $\sqrt{81}$ 9

8. $\sqrt{-36}$ NP

9. $\sqrt[3]{1}$ 1

10. $\sqrt[3]{8}$ 2

11. $-\sqrt{16}$ -4

12. $\sqrt{121}$ 11

13. $\sqrt[3]{-27}$ -3

14. $\sqrt[3]{216}$ 6

15. $-\sqrt{100}$ -10

16. $\sqrt{9}$ 3

17. $\sqrt[3]{27}$ 3

18. $-\sqrt{225}$ -15

19. $\sqrt{-4}$ NP

20. $\sqrt{-81}$ NP

21. $-\sqrt[3]{-27}$ $- -3$ 3

22. $\sqrt[3]{125}$ 5

23. $\sqrt{441}$

21

24. $\sqrt{\frac{4}{16}}$ $\frac{2}{4} = \frac{1}{2}$

25. $\pm\sqrt{\frac{64}{121}}$

$\frac{8}{11}, \frac{-8}{11}$

26. $-\sqrt{\frac{16}{81}}$

$\frac{-4}{9}$

27. $\sqrt{5(4+2) - 10 \div 5 + 7 \cdot 3}$

$\sqrt{5(6) - 2 + 21}$

$\sqrt{30 - 2 + 21}$

$\sqrt{49}$ $= 7$

28. $\sqrt{9 \cdot 6 + 10 \div 5 + 4 \cdot 2}$

$\sqrt{54 + 2 + 8}$

$\sqrt{56 + 8}$

$\sqrt{64}$ $= 8$

Estimate each to the nearest tenths place.

29. $\sqrt{10}$

$\sqrt{9}$ $\sqrt{16}$

3 4

3.2

30. $\sqrt{3}$

$\sqrt{1}$ $\sqrt{4}$

1 2

1.7

31. $\sqrt{110}$

$\sqrt{100}$ $\sqrt{121}$

10 11

10.5

32. $\sqrt{72}$

$\sqrt{64}$ $\sqrt{81}$

8 9

8.5

Order the following from least to greatest.

33. $\sqrt{2}$, 1.5, 1, 3, π, $\sqrt{8}$, 2

$\sqrt{1}$ $\sqrt[2]{4}$ $\sqrt{4}$ $\sqrt{9}$

1.3 3.14 2.9

$1, \sqrt{2}, 1.5, 2, \sqrt{8}, 3, \pi$

34. 4.5, $\sqrt{9}$, $\sqrt{6}$, 3.1, π, $\sqrt{18}$, 4

3 $\sqrt[2]{4}$ $\sqrt[3]{9}$ 3.14 $\sqrt{16}$

2.3

$\sqrt{6}, \sqrt{9}, 3.1, 3.14, 4, \sqrt{18}, 4.5$

For each of the following state, "rational" or "irrational" and explain why.

35. π

I - doesn't terminate or repeat

36. $\sqrt{100}$ $= 10$

R - terminates

37. $\sqrt{18}$

I - doesn't terminate or repeat.

38. 19.8

R - terminates

39. 19

R - terminates

40. -38.9

R - terminates

41. 19.168423...

I - doesn't terminate or repeat

42. 8.16161616...

R - repeats

43. 9.25845962...

I - doesn't terminate or repeat

Write each of the following numbers in scientific notation.

44. 9,260,000,000,000

9.26×10^{12}

45. 0.000000528

5.28×10^{-7}

46. 0.00061

6.1×10^{-4}

47. 8.7E-9

8.7×10^{-9}

48. 9.24E8

9.24×10^{8}

49. 65,000

6.5×10^{4}

Write each of the following numbers in standard notation.

50. 7.1×10^{9}

7,100000000

7,100,000,000

51. 1.75×10^{-3}

001,75

.00175

52. 4.813×10^{-7}

0000004,813

.0000004813

53. 6.8×10^{-3}

006.8

.0068

54. 9.432×10^{3}

9.432

9432

55. 3.1×10^{13}

3,1000000000000

31,000,000,000,000

Write each answer using scientific notation.

56. 3.2×10^{5} + 1.5×10^{6}

6

.32

1.5

1.82

1.82×10^{6}

57. 8.4×10^{10} - 5.4×10^{3}

10

.0000054

8.4000000000

3999999

− .00000054

8.39999946

$8.39999946 \times 10^{10}$

58. 6.3×10^{6} ÷ 2.1×10^{3}

2.1) 6.3

3×10^{3}

59. 7×10^{9} • 4×10^{3}

7×4

28×10^{12}

2.8×10^{13}

60. Find the mean, median, mode, and range for the following test scores:

~~93~~, ~~88~~, ~~93~~, ~~94~~, ~~83~~, ~~86~~, ~~84~~, ~~99~~

Mean $\frac{720}{8} = 90$

Median ~~83~~, ~~84~~, ~~86~~, 88, 93, ~~93~~, ~~94~~, ~~99~~ 90.5

Mode 93

Range 99 − 83 = 16

61. What is the best measure of central tendency for the list of values show above? WHY?

Mean because there are no outliers.

Answers:

1) a. 8 b. 14 c. –63 d. 10 e. –14 f. 55 g. 1 h. 20 i. –31 j. –21 k. –19 l. –3
m. 0 n. 22 o. 5 p. –8 q. –50 r. 9 s. 144 t. 8 u. 0 v. –8 w. –2 x. 25
2) a. 9/14 b. –16 ½ c. 1 1/6 d. –13/15 e. 2 5/12 f. 1 2/5

3) 9 1/4
4) 5/16
5) 14
6) 0.6, 60%
7/100, 7%
27/50, 0.54
0.666..., 66.666...%
9/100, 0.09
649/1000, 64.9%
5, 5.0
7) 9
8) NS
9) 1
10)2
11)–4
12)11
13)–3
14)6
15)–10
16)3
17)3
18)–15
19)NS
20)NS
21)3
22)5
23)21
24)½
25)8/11, –8/11
26)–4/9
27)7
28)8
29)~3.1-3.2
30)~1.6-1.9
31)~10.4-10.5
32)~8.4-8.5
33)1, SR2, 1.5, 2, SR8, 3, pi
34)SR6, SR9, 3.1, pi, 4, SR18, 4.5
35)I
36)R (ends)
37)I
38)R (ends)
39)R (ends)
40)R (ends)
41)I
42)R (repeats)
43)I
44)9.26×10^{12}
45)5.28×10^{-7}
46)6.1×10^{-4}
47)8.7×10^{-9}
48)9.24×10^{8}
49)6.5×10^{4}
50)7,100,000,000
51)0.00175
52)0.0000004813
53)0.0068
54)9432
55)31,000,000,000,000
56)1.82×10^{6}
57)8.4×10^{10}
58)3×10^{3}
59)28×10^{12} OR 2.8×10^{13}
60)90, 90.5, 93, 16
61)Mean – no outlier