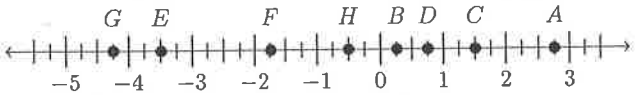
2016-2017 Final Review

Part 1: Integers

Name _____ Date _____

Refer to the number line to answer the questions.



_____ 1. What is the distance between A and C?

_____ 2. What is the distance between C and D?

_____ 3. How far apart are points F and G?

_____ 4. How far apart are points H and F?

_____ 5. Find the distance between A and F.

_____ 6. Which point is closer to the origin, D or F?

Tell whether the number is prime or composite. If it is composite, give the prime factors.

_____ 7. 23

_____ 8. 29

_____ 9. 20

_____ 10. 27

_____ 11. 67

_____ 12. 54

Find the prime factors.

_____ 13. 63

_____ 14. 84

_____ 15. 210

_____ 16. 448

Order from smallest to largest.

_____ 17. $-5, -2, -6$

_____ 18. $2, 6, -4, -8$

_____ 19. $-\frac{1}{3}, \frac{1}{3}, -\frac{4}{3}, -\frac{2}{3}$

_____ 20. $-4, 0, -6, -7$

Simplify.

_____ 21. $(-7) + (-2)$

_____ 22. $(-14) + (-8)$

_____ 23. $(-35) + (-26)$

_____ 24. $(-368) + (-98)$

_____ 25. $12 + (-4) + (-8)$

_____ 26. $(-34) + (-55) + 22$

_____ 27. $70 - (-67)$

_____ 28. $137 - (-127)$

_____ 29. $16 - 17$

_____ 30. $(-16) - 24 - (-9)$

_____ 31. $-24 \div -12$

_____ 32. $-156 \div -13$

_____ 33. $-189 \div 9$

_____ 34. $\frac{-100}{20}$

_____ 35. $(-4)(3)(-4)$

_____ 36. $(7)(-6)(-5)$

_____ 37. $(-3)(-2)(4)$

_____ 38. $-(-4)(-6)(-7)$

_____ 39. $3 + 2 \times 5$

_____ 40. $5 + 11 \times 3$

_____ 41. $6 \times 8 - 9 + 12 \div 3$

_____ 42. $40 \div 5 + 3 - 4(2)$

_____ 43. $(11 - 4) \times 5 - 15$

_____ 44. $12 - 3(7 - 3)$

_____ 45. $-26 - 60 \div 4$

_____ 46. $(6 + 2) \times (-2) + 9$

_____ 47. Find: $15 + 3 \cdot 2^2 - 10 \div 2$

_____ 48. Simplify: $\dfrac{24 - 6 \cdot 2}{8 + 16 \div 4}$

2016-2017 Final Review

Part 2: Fractions

Name _____ Date _____

Simplify.

_____ 1. $\frac{42}{60}$

_____ 2. $\frac{27}{72}$

_____ 3. $\frac{30}{100}$

_____ 4. $7\frac{11}{25} + 7\frac{2}{25}$

_____ 5. $7\frac{20}{35} + 4\frac{1}{35}$

_____ 6. $4\frac{7}{16} + 2\frac{7}{16}$

_____ 7. $4\frac{13}{20} + 6\frac{15}{20}$

_____ 8. $3\frac{5}{24} + 3\frac{3}{24} + 2\frac{2}{24}$

_____ 9. $\frac{3}{8} + \frac{1}{2}$

_____ 10. $\frac{1}{15} + \frac{1}{9}$

_____ 11. $\frac{2}{3} + \frac{1}{7}$

_____ 12. $\frac{2}{5} + \frac{1}{4}$

_____ 13. $\frac{3}{5} + \frac{1}{3}$

_____ 14. $\frac{7}{4} - \frac{5}{14}$

_____ 15. $2\frac{3}{5} - 2\frac{1}{5}$

_____ 16. $\frac{3}{4} - \frac{5}{8}$

_____ 17. $\frac{8}{9} - \frac{2}{3}$

_____ 18. $10\frac{11}{12} - 8\frac{1}{2}$

_____ 19. $\frac{1}{5} \times \frac{1}{9}$

_____ 20. $\frac{3}{4} \cdot \frac{4}{5}$

21. $\frac{3}{4} \times \frac{11}{3}$

22. $5 \times \frac{3}{4}$

23. $6 \cdot \frac{3}{5}$

24. $3\frac{5}{7} \cdot \frac{3}{8}$

25. $1\frac{1}{2} \times \frac{2}{3}$

26. $5\frac{5}{9} \times 3\frac{3}{8}$

27. $\frac{2}{3} \cdot \frac{3}{5} \cdot \frac{2}{7}$

28. $\frac{5}{16} \times \frac{12}{21} \times \frac{8}{15}$

29. $\frac{3}{8} \times \frac{4}{10} \times \frac{15}{27}$

30. $\frac{10}{21} \times \frac{15}{24} \times \frac{14}{25}$

31. $\frac{1}{2} \div \frac{1}{2}$

32. $\frac{1}{28} \div \frac{1}{9}$

33. $7 \div \frac{2}{3}$

34. $\frac{10}{13} \div 5$

35. $6 \div 1\frac{5}{7}$

36. $1\frac{7}{9} \div 4$

37. $5\frac{1}{4} \div \frac{3}{4}$

38. $3\frac{1}{3} \div \frac{5}{6}$

39. Jan has 2 pieces of wood. One is $3\frac{1}{4}$ feet long. The other is $5\frac{3}{4}$ feet long. Find the total length of the wood.

40. Of the 272 cookies baked at a bakery one day, $\frac{3}{8}$ were chocolate chip. How many were chocolate chip cookies?

2016-2017 Final Review

Part 3: Ratios, Percents, Rates

Name _____ Date _____

Rewrite each as a ratio of whole numbers.

_____ 1. 2 dollars to 20 dollars

_____ 2. 24 inches to 16 inches

_____ 3. 35 days to 21 days

_____ 4. 100 meters to 5 centimeters

Write each ratio in simplest form.

_____ 5. 39 : 27

_____ 6. 85 : 100

_____ 7. 35 : 56

_____ 8. 110 to 77

Solve each proportion.

_____ 9. $\frac{1}{2} = \frac{x}{8}$

_____ 10. $\frac{n}{16} = \frac{1}{2}$

_____ 11. $\frac{3}{7} = \frac{d}{77}$

_____ 12. $\frac{1}{4} = \frac{x}{16}$

_____ 13. $\frac{12}{26} = \frac{5}{x}$

_____ 14. $\frac{18}{50} = \frac{5}{x}$

Solve.

_____ 15. Find the unit price of 4 pounds of bananas for $1.08.

_____ 16. Find the unit price of 4 kilograms of chicken for $6.76.

Write as a decimal.

_____ 17. $\frac{1}{4}$

_____ 18. $\frac{3}{4}$

_____ 19. $\frac{1}{10}$

_____ 20. $\frac{7}{10}$

Write as a percent.

_____ 21. $\frac{1}{2}$

_____ 22. 1

_____ 23. $\frac{3}{10}$

_____ 24. $\frac{9}{10}$

Write as a fraction.

_____ 25. 0.25

_____ 26. 0.75

_____ 27. 0.1

_____ 28. 0.7

Write as a percent.

_____ 29. 0.5

_____ 30. 1

_____ 31. 0.3

_____ 32. 0.9

Fill in the table(s).

_____ 33. item: watch

regular price	$24.99
% discount	20%
sale price	

_____ 34. item: bathing suit

regular price	$35.00
% discount	10%
sale price	

_____ 35. item: jacket

wholesale	
% mark-up	20%
retail price	$55.80

_____ 36. item: refrigerator

wholesale	
% mark-up	25%
retail price	$275.00

2016-2017 Final Review

Part 4: Algebra

Name _____ Date _____

_____ 1. Solve for x given $x - 38 = 84$.

_____ 2. Solve for x given $x + 49 = 21$.

_____ 3. Solve for x given $x + \frac{2}{5} = \frac{3}{4}$.

_____ 4. Solve for x given $x + \frac{4}{9} = \frac{2}{5}$.

_____ 5. Solve for x: $-5x = \frac{2}{5}$

_____ 6. Solve for x: $3x + 31 = 76$

_____ 7. Solve for x given $3x + 31 = -76$.

_____ 8. Solve for x given $\frac{3}{4}x - 11 = 13$.

_____ 9. Solve for x: $3(2x - 5) = 16$

_____ 10. Solve for x given $3(2x - 5) = -16$.

_____ 11. Solve for x given $3x + 4(2x + 3) = 5x + 2$.

_____ 12. Evaluate: 9^2

_____ 13. Evaluate: 5^3

_____ 14. Evaluate: $(-3)^2$

_____ 15. Evaluate: -4^2

_____ 16. After Laurel added 38 to her number she had a total of 112. What was her number?

17. 87 less than Laura's number is 148. What is Laura's number?

18. After Jennie added 38 to her number she had -112. What was her number?

19. 87 less than Jenna's number is -148. What is Jenna's number?

20. What is the value of the expression $4x^2 - 5x$ when $x = 3$?

21. What is the value of the expression $4x^2 + 5x$ when $x = -3$?

22. Simplify:
$(3x^2-5x+9)+(7x^2+8x-15)$

23. Add:
$$\begin{array}{r} x^2 - 8x + 5 \\ +\ -3x^2 + 5x - 9 \\ \hline \end{array}$$

24. Simplify:
$5x^2-4x+7-(2x^2-3x-4)$

25. Determine which of the triangles whose lengths are given are right triangles.

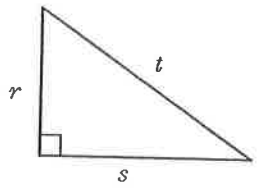
I. 3, 4, 5

II. 10, 24, 26

III. 8, 9, 10

IV. 2, 3, 6

26. For this triangle, which statement demonstrates the Pythagorean Property?



a) $r^2 + t^2 = s^2$

b) $s^2 + t^2 = r^2$

c) $r^2 + s^2 = t^2$

d) $s = r + 0$

e) $s = r + t$

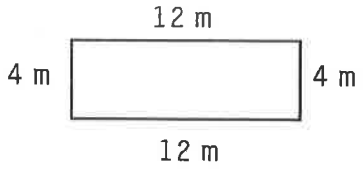
2016-2017 Final Review

Part 5: Geometry

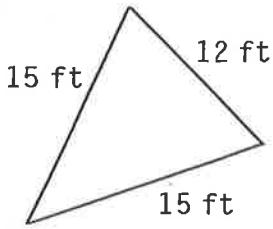
Name _____ Date _____

Find the perimeter.

_____ 1.

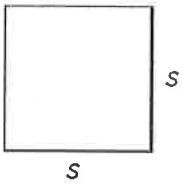


_____ 2.

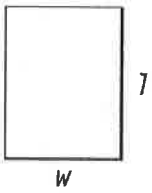


Find the area.

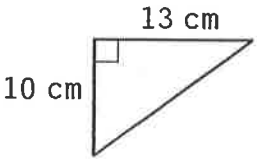
_____ 3. $s = 3\,\text{cm}$



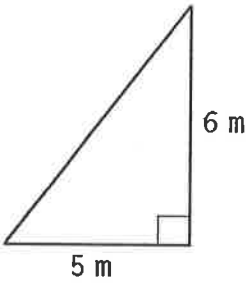
_____ 4. $l = 7.5\,\text{in},\ w = 6\,\text{in}$



_____ 5.

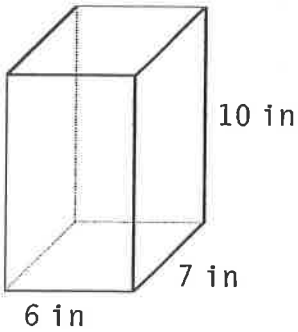


_____ 6.

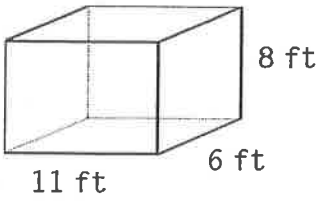


Find the surface area.

_____ 7.

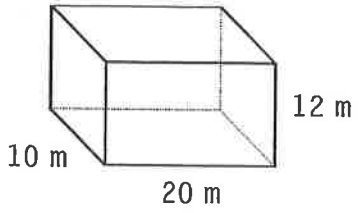


_____ 8.

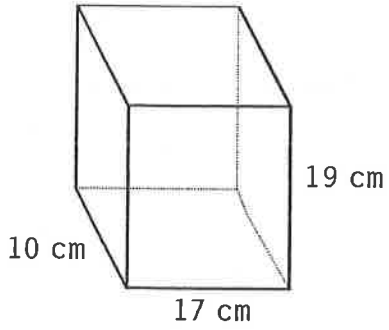


Find the volume.

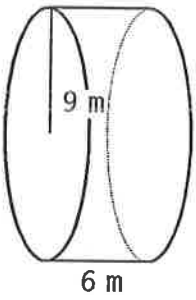
_____ 9.



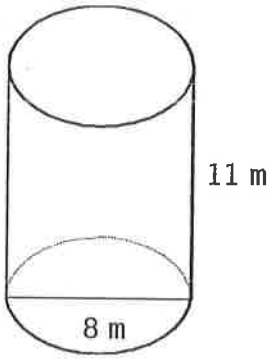
_____ 10.



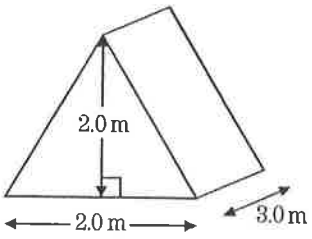
_____ 11.



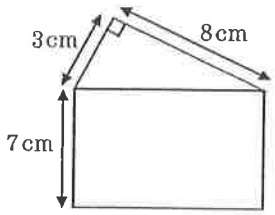
_____ 12.



_____ 13. What is the surface area (excluding the floor) of the tent? Answer to 1 decimal place.



_____ 14. What is the volume of the prism?



2016-2017 Math 8 Final Review Answers

Part 1: Integers

1. 2
2. 3
3. 1
4. 3
5. 4
6. F
7. prime
8. prime
9. 2, 4, 5, 10
10. 3, 9
11. prime
12. 2, 3, 6, 9
13. $3 \times 3 \times 7$
14. $2 \times 2 \times 3 \times 7$
15. $2 \times 3 \times 5 \times 7$
16. $7 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$
17. $-6, -5, -2$
18. $-8, -4, 2, 6$
19. $-\frac{4}{3}, -\frac{2}{3}, -\frac{1}{3}, \frac{1}{3}$
20. $-7, -6, -4, 0$
21. -9
22. -22
23. -61
24. -466
25. 0
26. -67
27. 137
28. 264
29. -1
30. -31
31. 2
32. 12
33. -21
34. -5
35. 48
36. 210
37. 24
38. 168
39. 13
40. 38
41. 43
42. 3
43. 20
44. 0
45. -41
46. -7
47. 22
48. 1

Part 2: Fractions

1. $\frac{7}{10}$
2. $\frac{3}{8}$
3. $\frac{3}{10}$
4. $14\frac{13}{25}$
5. $11\frac{3}{5}$
6. $6\frac{7}{8}$
7. $11\frac{2}{5}$
8. $8\frac{5}{12}$
9. $\frac{7}{8}$
10. $\frac{8}{45}$
11. $\frac{17}{21}$
12. $\frac{13}{20}$
13. $\frac{14}{15}$
14. $\frac{39}{28}$
15. $\frac{2}{5}$
16. $\frac{1}{8}$
17. $\frac{2}{9}$
18. $2\frac{5}{12}$
19. $\frac{1}{45}$
20. $\frac{3}{5}$
21. $\frac{11}{4}$
22. $\frac{15}{4}$
23. $\frac{18}{5}$
24. $\frac{39}{28}$
25. 1
26. $\frac{75}{4}$
27. $\frac{4}{35}$
28. $\frac{2}{21}$
29. $\frac{1}{12}$
30. $\frac{1}{6}$
31. 1
32. $\frac{9}{28}$
33. $10\frac{1}{2}$
34. $\frac{2}{13}$
35. $3\frac{1}{2}$
36. $\frac{4}{9}$
37. 7
38. 4
39. 9 ft
40. 102 cookies

Part 3: Ratios. Rates & Proportions

1. $1:10$
2. $3:2$
3. $5:3$
4. $2000:1$
5. $13:9$
6. $17:20$
7. $5:8$
8. $10:7$
9. 4
10. 8
11. 33
12. 4
13. $\frac{65}{6}$
14. $\frac{125}{9}$
15. \$0.27 per pound
16. \$1.69 per kilogram
17. $0.25, 25\%$
18. $0.75, 75\%$
19. $0.1, 10\%$
20. $0.7, 70\%$
21. $0.5, 50\%$
22. $1, 100\%$
23. $0.3, 30\%$
24. $0.9, 90\%$
25. $\frac{1}{4}, 25\%$
26. $\frac{3}{4}, 75\%$
27. $\frac{1}{10}, 10\%$
28. $\frac{7}{10}, 70\%$
29. $\frac{1}{2}, 50\%$
30. $1, 100\%$
31. $\frac{3}{10}, 30\%$
32. $\frac{9}{10}, 90\%$
33. \$19.99
34. \$31.50
35. \$46.50
36. \$220

Part 4: Algebra

1. 122
2. -28
3. $\frac{7}{20}$
4. $-\frac{2}{45}$
5. $-\frac{2}{25}$
6. 15
7. $-\frac{107}{3}$
8. 32
9. $\frac{31}{6}$
10. $-\frac{1}{6}$
11. $-\frac{5}{3}$
12. 81
13. 125
14. 9
15. -16
16. 74
17. 235
18. -150
19. -61
20. 21
21. 21
22. $10x^2 + 3x - 6$
23. $-2x^2 - 3x - 4$
24. $3x^2 - x + 11$
25. I and II only
26. c

Part 5: Geometry

1. 32 m
2. 42 ft
3. $9\,\text{cm}^2$
4. $45\,\text{in}^2$
5. $65\,\text{cm}^2$
6. $15\,\text{m}^2$
7. $344\,\text{in}^2$, ~~$420\,\text{in}^3$~~
8. $404\,\text{ft}^2$, ~~$528\,\text{ft}^3$~~
9. ~~$1120\,\text{m}^2$~~, $2400\,\text{m}^3$
10. ~~$1366\,\text{cm}^2$~~, $3230\,\text{cm}^3$
11. ~~$847.8\,\text{m}^2$~~, $1526.04\,\text{m}^3$
12. ~~$376.8\,\text{m}^2$~~, $552.64\,\text{m}^3$
13. $17.4\,\text{m}^2$
14. $84\,\text{cm}^3$