

Placement Test - Grade 7

Basic Operations

1. Two kilograms of ground cinnamon is packaged into bags containing 38 g each. There will also be some cinnamon left over. How many bags will there be?

2. Write the expressions using an exponent. Then solve.

a. $2 \times 2 \times 2 \times 2 \times 2$ _____

b. five cubed _____

c. ten to the seventh power _____

3. Write in normal form (as a number).

$7 \times 10^7 + 2 \times 10^5 + 9 \times 10^0$ _____

4. Round to the place of the underlined digit.

a. 6,299,504 ~ _____

Expressions and Equations

5. Write an expression.

a. 2 less than s _____

b. the quantity $7 + x$, squared _____

6. Evaluate the expressions when the value of the variable is given.

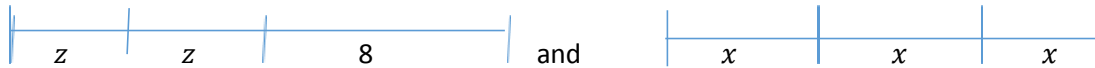
a. $40 - 8x$, when $x = 2$

7. Write an expression for each situation.

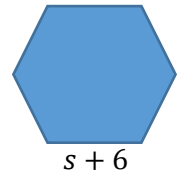
a. You bought m yogurt cups at \$2 each and paid with \$50. What is your change?

b. What is the area of a square with side length s ?

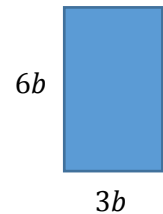
8. Write an expression for the total length of the line segments, and simplify it.



9. Write an expression for the perimeter of the figure, and simplify it.



10. Write an expression for the area of the figure, and simplify it.



11. Simplify the expressions.

a. $9x - 6x$	b. $2(6p + 5) =$
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12. Find the missing number in the equations.

a. _____ $(6x + 5) = 12x + 10$	b. $5(2h + \text{_____}) = 10h + 30$
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14. Solve the equations.

a. $\frac{x}{31} = 6$	b. $a - 8.1 = 2.8$
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15. Which of the numbers 0, 1, 2, 3 or 4 make the equation $8/y^2 = 2$ true?

16. Write an inequality for each phrase. You will need to choose a variable to represent the quantity in question.

a. Eat at most 5 pieces of bread. _____

b. You have to be at least 21 years of age. _____

17. A car is traveling with a constant speed of 80 kilometers per hour. Consider the variables of time (t), measured in hours, and the distance traveled (d), measured in kilometers.

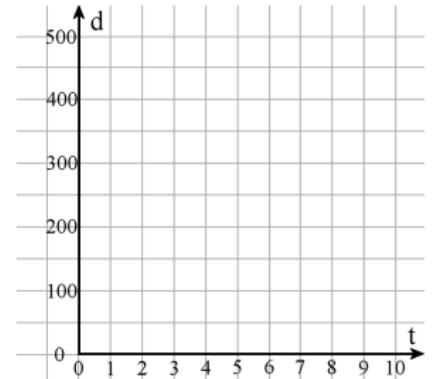
a. Fill in the table.

t (hours)	0	1	2	3	4	5	6
d (km)							

b. Plot the points on the coordinate grid.

c. Write an equation that relates t and d .

d. Which of the two variables is the independent variable?



18. Write as fractions or mixed numbers.

a. 0.00078 _____

b. 2.000302 _____

19. Find the value of the expression $x + 0.07$ when x has the value 0.0002.

20. Calculate mentally.

a. $0.8 \div 0.1 =$	b. $0.06 \times 0.008 =$
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21. One brick is 215 mm long. How many of these bricks, put end to end, will cover a 5.15 meter wall?

22. Find least common multiple of 2 and 8.

23. Find highest common factor of 26 and 48.

24. How many $\frac{3}{4}$ -cup servings can you get from $7\frac{1}{2}$ cups of coffee?

25. Complete the table below:

Fraction	Decimal	Percentage
$\frac{1}{4}$		
		33%
	0.02	

26. The perimeter of a rectangular screen is $15\frac{1}{2}$ inches, and the ratio of its width to its height is 3:2. Find the width and height of the screen.

27. Compare the numbers, writing < or > in the box.

a. $0 \square - 3$

b. $-2 \square - 8$

28. Calculate mentally

a. $0.8 \div 0.1 =$	b. $0.06 \times 0.008 =$
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29. a. Estimate the answer to 7.1×0.0058 . _____

b. Calculate the exact answer.

30. Multiply or divide.

a. $10^5 \times 0.905 =$	b. $24 \div 10^4 =$
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31. Joe and Mick also worked on a project unequally. They decided to divide their pay in a ratio of 3:4 (3 parts for Joe, 4 parts for Mick). The total pay was \$180. Calculate how much Mick got.

32. Fill in the table, using mental math.

	510
1% of the number	
5% of the number	
10% of the number	
30% of the number	

33. A pair of roller skates is discounted by 40%. The normal price is \$65. What is the discounted price?

34. Find the difference between the two temperatures.

a. -13°C and 10°C _____

b. -9°C and -21°C _____

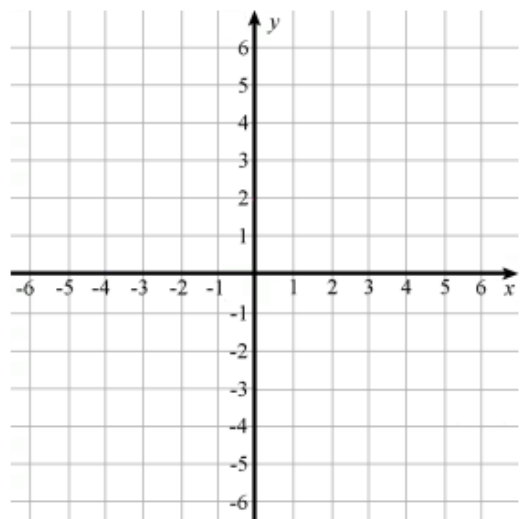
35. a. Plot the point $(-5, 3)$.

b. Reflect the point in the x-axis .

c. Now, reflect the point you got in (b) in the y-axis.

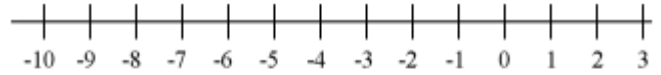
d. Join the three points with line segments.

What is the area of the resulting triangle?

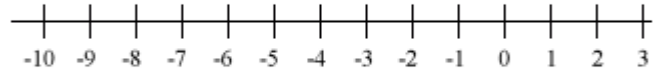


36. Draw a number line jump for each addition or subtraction sentence, and solve.

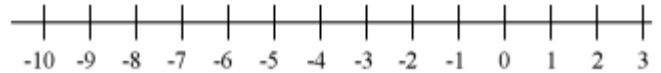
a. $-2 + 5 = \underline{\hspace{2cm}}$



b. $-2 - 4 = \underline{\hspace{2cm}}$

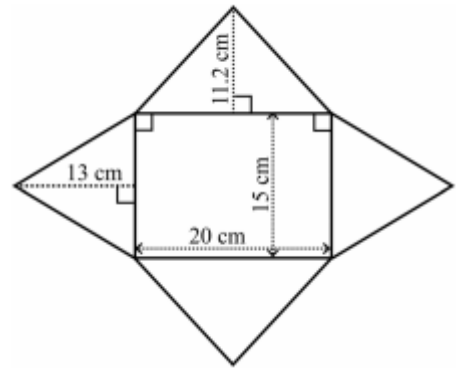


c. $-1 - 5 = \underline{\hspace{2cm}}$



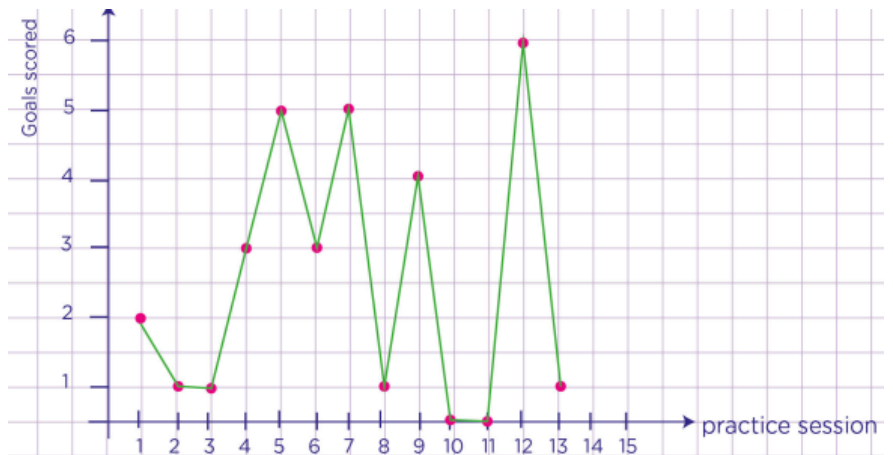
37. a. Name the solid that can be built from this net.

b. Calculate its surface area.



38. Barbra is practicing handball skills in scoring goals. During each practice session, she counts the number of goals she makes in 15 tries. She kept the data from 13 practice sessions and made the line graph below.

How many goals did Barbra score during all her 13 practice sessions?



39. Convert these measurements.

a. $53 \text{ ml} = \underline{\hspace{2cm}} \text{ l}$

b. $5.6 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

c. $550 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$

d. $2 \text{ g} = \underline{\hspace{2cm}} \text{ g}$

40. Complete the table below

Question Number	Start time	End time	Hours	minutes
1	10 : 45 am	3 : 15 pm		
2		2 : 50 pm	2	20
3	10 : 00 pm		3	5

41. A car manufacturing company kept a record of the number of cars manufactured each month.

Cars manufactured	
Months	Number of cars
March	8
April	8
May	10
June	6
July	5

What is the mode of the numbers?

42. Linda kept track of the number of marbles collected for the past 8 days

Marbles Collected	
Days	Number of marbles
1	10
2	6
3	7
4	3
5	10
6	10
7	4
8	8

(a) What is the median of the numbers?

(b) What is the Mean?

43. Solve each proportion below to find the missing digit.

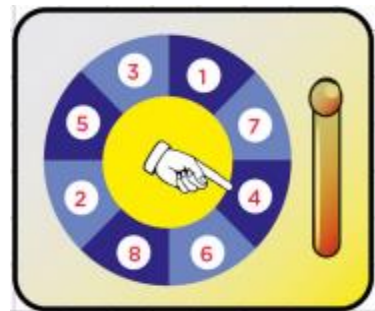
a. $\frac{x}{2}$ and $\frac{9}{3}$ $x = \underline{\hspace{2cm}}$

b. $\frac{n}{7}$ and $\frac{28}{4}$ $n = \underline{\hspace{2cm}}$


c. $\frac{1}{b}$ and $\frac{4}{8}$ $b = \underline{\hspace{2cm}}$

44. You spin the spinner once.

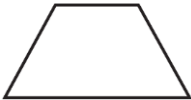
What is the probability (less than 6). Give your answer as a fraction or whole number.



45. Complete the following table

3D Shape	Name	No. of faces	No. of vertices	No. of edges	No. of curved surfaces
					
	tetrahedron				
		6	8	12	0
	cylinder				

46. Complete the given table

Polygon	Polygon name	No. of sides	Pairs of parallel sides	Number of right angles
				
	Pentagon			
