2018 – 2019 7th Grade Mathematics Volume 1 Mid-term Mock Paper

One, multiple choice:

1. The storage temperature of a certain kind of quick-frozen dumplings is -18±2℃, and the temperature of the four refrigerator compartments is as follows. Which of the following is not suitable to store this kind of dumpling? ( )

A. －17℃ B. －22℃ C. －18℃ D. －19℃

2. Which of the following estimations of 0.06019 is incorrect? ( )

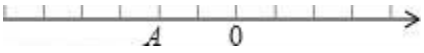
A. 0.1 (accurate to 0.1) B. 0.06 (accurate to 0.001)

C.0.06(accurate to 0.01) D. 0.0602 (Accurate to 0.0001)

3. 1782.2 billion written in scientific notation is（ ）

A. 1.782×10^{12} B. 1.78×10^{11} C. 1.78×10^{12} D. 1.79×10^{12}

4. As shown in the figure, the number represented by point A on the number axis is -2. Move point A to the right by 3 unit lengths to obtain point B, then the number represented by point B is ( )



A. －5 B. 0 C. 1 D. 3

5. Function 4(a-x)-4(x+1)=60 has the solution x=-2. Therefore, a has a value of（ ）

A. 22 B. -14 C. 18 D. 12

6. If both A and B are 3-degreed polynomials, then A + B has to be( )

A. a 6-degreed polynomial B. a 3-degreed polynomial

C. a polynomial with a degree no higher than 3 D. a polynomial with a degree no less than 3

7. Which of the following is correct?（ ）

A. 7x= 4x－3 can be rewritten as 7x－4x=3

B、$\frac{2x-1}{3}=1+\frac{x-3}{2}$ can be rewritten as 2(2x－1)=1+3(x－3)

C、2(2x－1)－3(x－3)=1 can be rewritten as 4x－2－3x－9=1

D、2(x+1)=x+7 can be rewritten as x=5

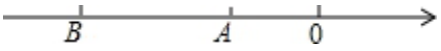
8. 13600000=1.36×10^a，3590000=2.45×10^b，$(b-a)^5$=(　　)

A．1　　B．－1　　C．2　　D．－2

9. Which of the following equations are valid?（　　）

A．$6a+a=6a^2$　　B．$-2a+5b=3ab$　　C．$4m^2n-2mn^2=2mn$　　D．$3ab^2-5b^2a=-2ab^2$

10. If the two points on the number line A and B each represent the numbers a and b, which of the following relationships are correct? (　　)

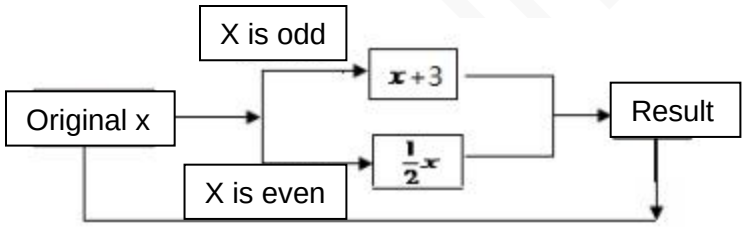


A．a＜b　　B．－a＜b　　C．|a|＜|b|　　D．－a＞－b

11. Given that polynomial $A=x^2+2y^2-z^2$,$B=-4x^2+3y^2+2z^2$ and A+B+C=0, then C is (　　)

A．$5x^2-y^2-z^2$　　B．$3x^2-5y^2-z^2$　　C．$3x^2-y^2-3z^2$　　D．$3x^2-5y^2+z^2$

12. Calculating according to the following function, if the x value going in is 2, then the first result would be 1. The second time going, the result would be 4. ... The 2016 time out of the function has a value of (　　)



A．1　　B．2　　C．3　　D．4

Two, fill in the blanks:

13. If |a—4|+|b+5|=0, then a—b=___

14. If $(x-3)^2+|y+5|=0$, then x^y-y^x=_____.

15.用图 2 所示的正方形和长方形卡片若干张，拼成一个长为$3a+b$，宽为$a+2b$的矩形，需要A类卡片_____张，B类卡片_____张，C类卡片_____张.

16. If $|a+5|+(b-4)^2=0$, then $(a+b)^{2016}$=_____.

17. The total workload completed by the 4 workers in three months is 15 more than 4 times the per capita quota for one month. If the per capita quota for one month is set to be x pieces, then the actual per capita workload of these 4 workers in three months is _____pieces. (Use x in your expression)

18. As shown in the figure, put black chess pieces of the same size on the edge of the regular polygon. According to this rule, the number of black chess pieces required for the nth (n is an integer greater than 0) figure is _____.

Three, calculate:

19. Calculate: $-4-28-(-19)+(-24)$

20. Calculate: $\left(-\frac{3}{5}\right)\times\left(-\frac{1}{2}\right)\div\left(-\frac{1}{4}\right)\div 3$

21. Calculate: $-4^2-[-2-(5-0.5\times\frac{1}{3})\times(-6)]$.

22. Calculate: $-2^2+[(-4)\times(-\frac{1}{2})-|-3|]$

23. Simplify: $5(a^2b-3ab^2)-2(a^2b-7ab^2)$.

24. Simplify: $2(2a^2+9b)+3(-5a^2-4b)$.

Four, short answer questions

25. Plot the following numbers on the number line, and then order them from least to greatest.

$3^2,\quad (-2)^3,\quad 0,\quad \left|-\frac{1}{2}\right|,\quad -(2-5),\quad +(-1)$

26. Alice was doing the following problem: "Calculate the value of（$2x^3-3x^2y-2xy^2$）-（$x^3-2xy^2+y^3$）+（$-x^3+3x^2y-y^3$）. Among which, $x=\frac{1}{2}$, $y=-1$". Alice accidentally read "$x=\frac{1}{2}$" as "$x=-\frac{1}{2}$", but she still got the correct answer. How is this possible? Explain with reasoning.

27. Out of the numbers －5，1，－3，5，－2, take three random numbers and multiply them. The largest possible product is a, and the smallest is b,

（1）Find the value of a and b

（2）If $|x+a|+|y-b|=0$, find the value of （x－y）÷y

28. A customer paid 400 dollars for 8 sets of clothing. She picks a certain price to sell them for a profit. If every set of clothing costs 55 dollars as the standard price, excess price is recorded as positive, while not enough is recorded as negative. The prices of the 8 sets of clothing is as follows: +2， －3，+2+1， －2， －1，0， －3（Units: $$）；
Please explain with your calculation:
（1）Will she make a profit or a loss when she sells these eight sets of children's clothing? How much money did you make (or lose)?
（2）What is the average price of each set of children's clothing?

29. Given that $|a+2|+(b+1)^2+(c-\frac{2}{3})^2=0$, find the value of $5abc-\{2a^2b-[3abc-(4ab^2-a^2b)]\}$.

Answer Key

1.B

2.B.

3.C.

4.D

5.C.

6.D

7.B

8.D.

9.C

10.B.

11.B

12.B

13. Answer: 9.
14. Answer: 110
15. Answer: 30.3 ； 7； 2

16. Answer: 1
17. Answer: x+3.75；

18. Answer: n(n+1)

19. S: Original Equation= - 32+19 - 24= - 37

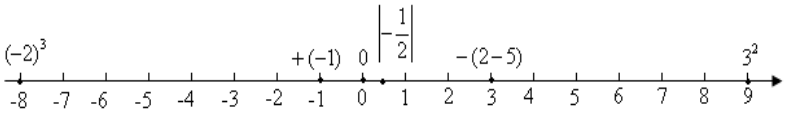
20.$-\frac{2}{5}$；

21. S: Original Equation= - 16 - [- 2 - $\frac{29}{6}$×(- 6)]= - 16 - 27= - 43

22.-1

23. Original Equation=$3a^2b-ab^2$；
24. Original Equation=$-11a^2+6b$

25. S: $3^2=9,\quad (-2)^3=-8,\quad 0,\quad \left|-\frac{1}{2}\right|=\frac{1}{2},\quad -(2-5)=3,\quad +(-1)=-1$

Plotted on the number line: 

Ordered from least to greatest: $(-2)^3 < +(-1) < 0 < \left|-\frac{1}{2}\right| < -(2-5) < 3^2$

26. S:（$2x^3 - 3x^2y - 2xy^2$）-（$x^3 - 2xy^2+y^3$）+（$- x^3+3x^2y - y^3$）
$=2x^3 - 3x^2y - 2xy^2 - x^3+2xy^2 - y^3 - x^3+3x^2y - y^3= - 2y^3= - 2\times（- 1）^3=2$.
Because x is canceled out during the simplification, the value of x doesn't matter.
27.（1）The greatest possible value must be positive, so（-5）×（-3）×5=75. The least possible value must be negative, so（-5）×（-3）×（-2）=-30. So a=75；b=-30；

（2）According to the rules of non-negativity, x=-75,y=-30，so（x - y）÷y=1.5；

28. S:（1）Sales price: 55×8+（2 - 3+2+1 - 2 - 1+0 - 3）=440 - 4=436, Profit: 436 - 400=36（dollars）; Answer: When he sold these eight sets of children's clothing, he made a profit, making a profit of 36 dollars;
（2）Average sales price: 436÷8=54.5（dollars）, Answer: The average sales price of every set of clothing is 54.5 dollars.

29. S: According to the rules of non-negativity: a=-2,b=-1,c=$\frac{2}{3}$, original equation=$8abc-a^2b-4ab^2=\frac{4}{3}$.