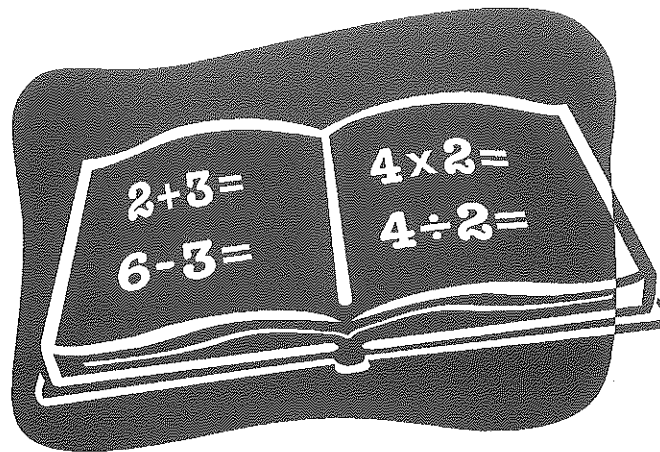


# Summer Math Packet

## Incoming Grade 8 Students



Student Name: \_\_\_\_\_



# *Perth Amboy* Public Schools

June, 2019

Dear Parents, Guardians, and Students,

Perth Amboy Public Schools is committed to promoting Mathematics throughout the summer months in order to enhance each student's mathematical proficiency and to further develop their mathematical understanding. Although your child has acquired new skills during this school year, he/she may lose ground if a review of the grade level concepts and skills does not continue over the summer!

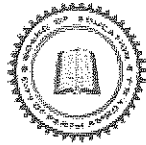
This summer, your child is being asked to complete the attached summer Math packet. Completion of the summer math packet will result in extra credit points to begin the year! The summer Math packet will be due by **September 20, 2019**. Your child's teacher will discuss, collect, and assess the summer assignment.

Parents are strongly encouraged to work with their children on these packets. When parents stay closely involved in their child's academic life, positive results can be sure to follow. Let's work together – as parent, teacher, and student – to ensure a productive beginning to a successful school year this fall.

Have a safe, happy, and healthy summer!

Regards,

The Perth Amboy Middle School Math Team



# Perth Amboy

## Public Schools

Junio 2019

Estimados Padres, Guardianes y Estudiantes,

El distrito escolar de Perth Amboy se ha comprometido a mejorar la área de las matemáticas durante los dos meses de verano con el fin de aumentar las destrezas matemáticas de cada estudiante y para desarrollar aún más la capacidad de su entendimiento de las matemáticas por toda la vida. Recuerde que, aunque el niño ha adquirido nuevas habilidades durante este año escolar, él / ella puede perder destrezas si no continúa repasando durante el verano!

Este verano, **se le pide a su hijo(a) que complete el paquete de matemáticas incluido con esta carta.** ¡La asignación completa resultará en puntos extra para comenzar el año escolar! El paquete de matemáticas se tiene que entregar el **20 de septiembre de 2019**. El maestro de su hijo/a va a evaluar la asignación de verano.

Les sugerimos a los padres que por favor ayuden a sus hijos. Cuando los padres están involucrados en la vida académica de sus hijos, ellos tienen más posibilidades de tener resultados positivos. Vamos a trabajar juntos – como padre, maestro y estudiante - para asegurar un principio productivo para el año escolar.

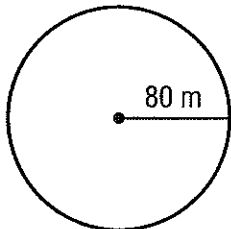
¡Tengan un verano seguro, feliz y saludable!

Un cordial saludo,

El Equipo de Matemáticas de la Escuela Intermedia del Distrito de Perth Amboy

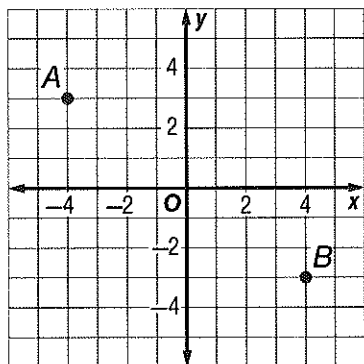
# Mathematics Summer Work 2019 (Incoming 8<sup>th</sup> Grade)

1. If Michelle rollerblades around a circular track with a radius of 80 meters, how far does she skate? Use 3.14 for  $\pi$ . Round to the nearest tenth.



- A. 251.2 m  
 B. 502.4 m  
 C. 12,352 m  
 D. 20,096 m
2. A sprinter runs 400 meters in 54 seconds. What is the runner's average running rate in meters per second? Round to the nearest tenth.
- F. 8.5 meters per second  
 G. 7.8 meters per second  
 H. 7.4 meters per second  
 I. 6.8 meters per second

3. **SHORT ANSWER** Find the slope of the line that passes through points *A* and *B*. Show your work.



4. The weight of an object on Mars varies directly as the weight of the object on Earth. A 90-pound object on Earth weighs 34 pounds on Mars. If an object weighs 135 pounds on Earth, how much does it weigh on Mars?

- A. 51 pounds  
 B. 63 pounds  
 C. 219 pounds  
 D. 357 pounds

5. A jar contains 3 pennies, 5 nickels, 4 dimes, and 6 quarters. If a coin is selected at random, what is the probability of selecting a penny?

- F.  $\frac{5}{18}$   
 G.  $\frac{2}{9}$   
 H.  $\frac{1}{3}$   
 I.  $\frac{1}{6}$

6. Which expression is equivalent to the algebraic expression below?

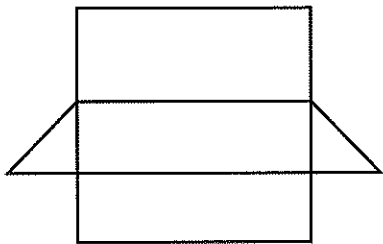
$$3(-2x - 1)$$

- A.  $x + 2$   
 B.  $x - 1$   
 C.  $-6x - 3$   
 D.  $-6x - 1$

# Mathematics Summer Work 2019 (continued)

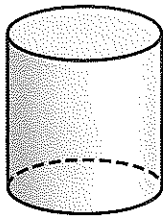
7. **SHORT ANSWER** A cereal company is giving away 1 of 6 different prizes in each box of cereal. Describe a simulation you could use to estimate the number of boxes needed to get all 6 prizes.

8. Which three-dimensional figure is modeled by the net below?



- F. rectangular prism
- G. triangular prism
- H. square pyramid
- I. rectangular pyramid

9. What is the vertical cross section of a cylinder?

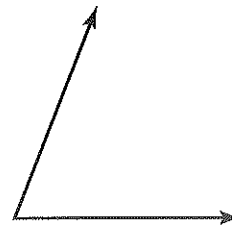


- A. circle
- B. oval
- C. rectangle
- D. point

10. What is the probability of tossing a penny and landing on heads three times in a row?

- F.  $\frac{3}{2}$
- G.  $\frac{1}{2}$
- H.  $\frac{1}{4}$
- I.  $\frac{1}{8}$

11. What type of angle is shown below?



- A. acute
- B. right
- C. obtuse
- D. straight

12. What is the scale factor of a drawing if the scale is 1 inch = 4 feet?

- F.  $\frac{1}{48}$
- G.  $\frac{1}{4}$
- H. 4
- I. 48

# Mathematics Summer Work 2019 (continued)

13. Megan surveyed a random sample of 60 students at her school and found that 42 of them ride the bus to school each day. If there are 320 students at Megan's school, about how many of them ride the bus to school each day?

- A. 348 students
- B. 224 students
- C. 188 students
- D. 132 students

14. **SHORT ANSWER** The advertisement below shows the terms of a certificate of deposit (CD) at a local bank.

**Super CD!**

- ▶ Invest for 2 years and earn 2.75% simple annual interest.
- ▶ Invest for 3 years and earn 3.25% simple annual interest.
- ▶ Invest for 4 years and earn 3.75% simple annual interest.

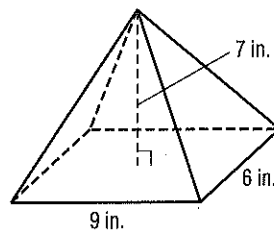
See an associate today!

Suppose Robert invests \$1,200 in the CD for a period of 3 years. How much interest will he earn? How much will Robert have after 3 years?

15. Last summer there were 88 players at Coach Rodriguez's basketball camp. This year there are 125% of this number of players. How many players are there at camp this year?

- F. 70 players
- G. 98 players
- H. 106 players
- I. 110 players

16. What is the volume of the pyramid shown below?



- A.  $126 \text{ in}^3$
- B.  $189 \text{ in}^3$
- C.  $221 \text{ in}^3$
- D.  $378 \text{ in}^3$

17. What is the constant rate of change of the ordered pairs?

x	y
1	2
3	10
5	18
7	26

- F. 8
- G. 6
- H. 4
- I. 2

18. What is the decimal equivalent of the fraction  $\frac{32}{45}$ ?

- A. 0.71
- B.  $0.\overline{71}$
- C.  $0.\overline{71}$
- D.  $0.0\overline{71}$

# Mathematics Summer Work 2019 (continued)

19. Kyle wants to determine the most popular sport among students at his school. Which of the following will likely result in a biased sample?

- F. surveying every 5th student standing in the lunch line
- G. surveying a random sample of 3 students from each homeroom
- H. surveying a random sample of 25 students attending a school football game
- I. surveying every 10th student who enters the school one morning

20. Last year there were 29 students at a creative writing workshop. This year 35 students attended the workshop. To the nearest tenth, what is the percent of change in the number of students in attendance?

- A. 20.7% decrease
- B. 20.7% increase
- C. 17.1% decrease
- D. 17.1% increase

21. In a recent survey, 88% of shoppers at a grocery store said they would be interested in a rewards program. If there were 450 shoppers surveyed, which proportion can be used to find the number who are interested in a rewards program?

- F.  $\frac{100}{88} = \frac{n}{450}$
- G.  $\frac{88}{450} = \frac{n}{100}$
- H.  $\frac{88}{100} = \frac{450}{n}$
- I.  $\frac{88}{100} = \frac{n}{450}$

22. Which property is illustrated by the equation below?

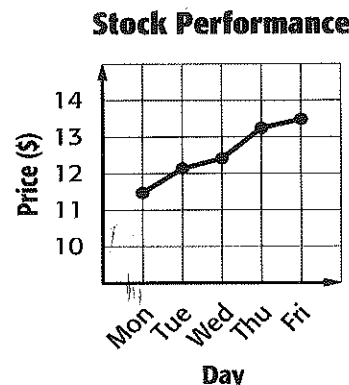
$$7 + (-7) = 0$$

- A. Additive Inverse Property
- B. Distributive Property
- C. Associative Property of Addition
- D. Additive Identity Property

23. Which of the following shows the rational numbers in order from least to greatest?

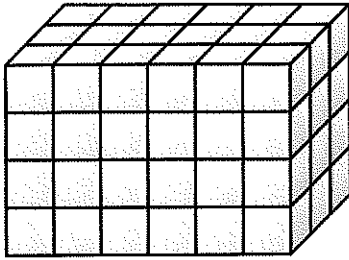
- F. 81.5%,  $0.81\bar{5}$ ,  $\frac{33}{40}$
- G. 81.5%,  $\frac{33}{40}$ ,  $0.81\bar{5}$
- H.  $0.81\bar{5}$ ,  $\frac{33}{40}$ , 81.5%
- I.  $0.81\bar{5}$ , 81.5%,  $\frac{33}{40}$

24. **SHORT ANSWER** The line graph shows the performance of a stock over a 5-day period. Describe what is misleading about the data display.



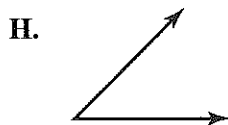
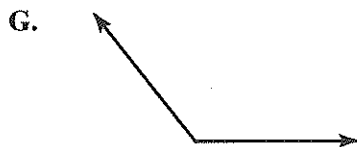
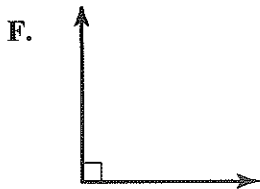
# Mathematics Summer Work 2019 (continued)

25. How many blocks were needed to make the rectangular prism below?



- A. 54 blocks
- B. 72 blocks
- C. 84 blocks
- D. 108 blocks

26. Which of the following angles would be classified as an acute angle?

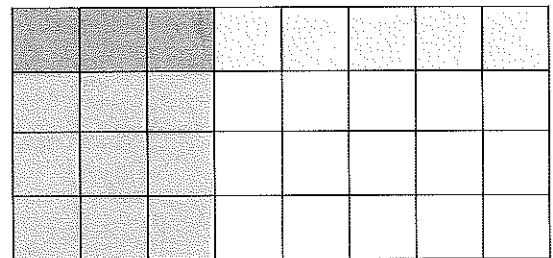


27. **SHORT ANSWER** Ronaldo rolled a number cube 50 times. During these trials he rolled the number 5 a total of 7 times. Based on these trials, what is the probability of rolling a 5? Does this represent a theoretical or experimental probability? Explain.

28. Which of the following linear expressions *cannot* be factored?

- A.  $15x + 22$
- B.  $12x - 10$
- C.  $8x - 2$
- D.  $7x + 21$

29. Which of the following number sentences represent the model shown below?



- F.  $\frac{3}{4} \times \frac{1}{8} = \frac{3}{32}$
- G.  $\frac{3}{8} \times \frac{3}{4} = \frac{9}{32}$
- H.  $\frac{3}{8} \times \frac{1}{4} = \frac{3}{32}$
- I.  $\frac{1}{4} \times \frac{1}{3} = \frac{1}{12}$

30. Which of the following rational numbers is equivalent to a repeating decimal?

- A.  $\frac{24}{60}$
- B.  $\frac{30}{64}$
- C.  $\frac{29}{50}$
- D.  $\frac{35}{60}$



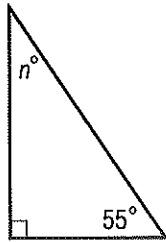
# Mathematics Summer Work 2019

(continued)

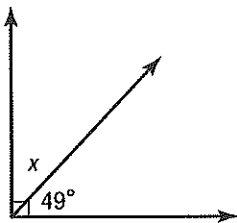
31. The angle measures of a triangle are  $33^\circ$ ,  $94^\circ$ , and  $53^\circ$ . Which of the following best classifies the triangle by its angle measures?

- F. acute
- G. obtuse
- H. right
- I. scalene

32. **SHORT ANSWER** Write and solve an equation to find the missing measure. Show your work.

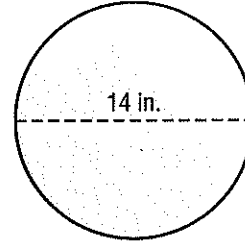


33. What is the measure of  $x$  in the figure below?



- A.  $31^\circ$
- B.  $41^\circ$
- C.  $49^\circ$
- D.  $131^\circ$

34. A large pizza at Angelo's Pizzeria has a diameter of 14 inches. What is the area of the pizza? Use 3.14 for  $\pi$ . Round to the nearest tenth.



- F.  $44.0 \text{ in}^2$
- G.  $122.7 \text{ in}^2$
- H.  $153.9 \text{ in}^2$
- I.  $615.4 \text{ in}^2$

35. A home improvement store normally sells 20-foot extension ladders for \$225. This week the ladders are discounted by 20%. What is the sale price of the ladders?

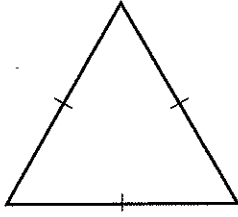
- A. \$180
- B. \$165
- C. \$60
- D. \$45

36. **SHORT ANSWER** A computer store builds custom computers by allowing customers to choose 1 of 4 different CPUs, 1 of 8 hard drives, and 1 of 3 video cards. How many different computers are possible?

# Mathematics Summer Work 2019

(continued)

37. Which of the following best classifies the triangle below by its angles and sides?

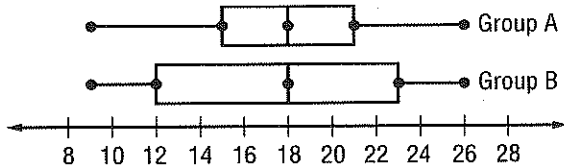


- F. acute, isosceles
- G. acute, equilateral
- H. acute, scalene
- I. obtuse, equilateral

38. In an obstacle course race, how many ways can five finalists be ordered?

- A. 1
- B. 5
- C. 24
- D. 120

39. **SHORT ANSWER** Compare and contrast the data represented in the double box plot below.



40. What is the solution to the equation below?

$$\frac{7}{8} \left( x - \frac{1}{2} \right) = -\frac{49}{80}$$

- F.  $-\frac{6}{5}$
- G.  $-\frac{1}{5}$
- H.  $\frac{1}{5}$
- I.  $\frac{6}{5}$

41. The table shows the number of yards jogged by Kaylee each minute.

Time(min)	Distance (yd)
1	175
2	350
3	525
4	700

If the pattern continues, how many yards will Kaylee have jogged after 20 minutes?

- A. 875 yd
- B. 1,750 yd
- C. 3,500 yd
- D. 3,850 yd

42. Simplify the expression below.

$$(-7x + 4) - (2x - 8)$$

- F.  $-5x - 4$
- G.  $-5x + 12$
- H.  $-9x - 4$
- I.  $-9x + 12$

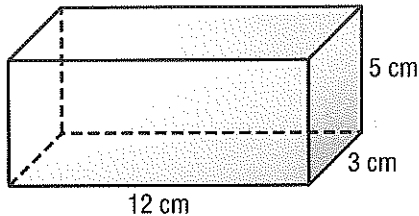
# Mathematics Summer Work 2019

(continued)

43. The table shows the number of different types of rides at an amusement park. Which type of data display would be best show the number of items in specific categories?

Type of Ride	Number
Water Slides	9
Rollercoasters	14
Spinning Rides	5
Funhouses	4

- A. bar graph  
 B. circle graph  
 C. line graph  
 D. line plot
44. **SHORT ANSWER** What is the surface area of the rectangular prism shown below?

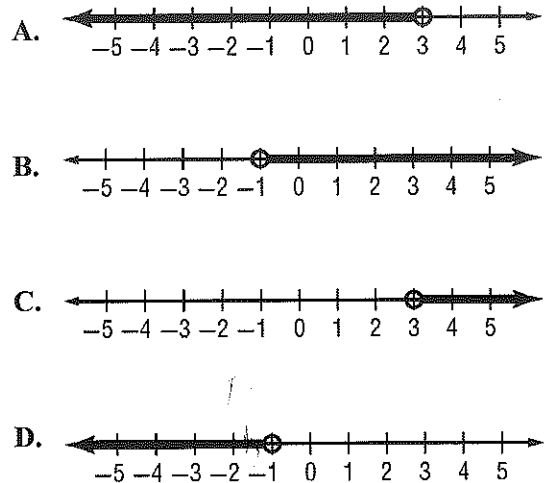


45. Angles  $C$  and  $E$  are supplementary. If  $m\angle C = 77^\circ$ , what is the measure of angle  $E$ ?
- F.  $13^\circ$   
 G.  $77^\circ$   
 H.  $103^\circ$   
 I.  $113^\circ$

46. How much simple interest would be earned on an investment of \$16,000 if the money is invested for 20 years at an annual interest rate of 5.25%?
- A. \$840  
 B. \$16,800  
 C. \$16,840  
 D. \$32,800
47. A muffin recipe calls for 8 cups of flour and yields 24 muffins. If Natalie wants to make 60 muffins, how much flour will she need?
- F. 180 cups  
 G. 24 cups  
 H. 20 cups  
 I. 3.2 cups

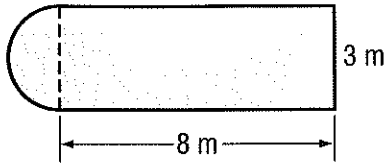
48. Which number line shows the solution to the inequality below?

$$-4g < 4$$



# Mathematics Summer Work 2019 (continued)

49. What is the area of the figure below? Use 3.14 for  $\pi$ . Round to the nearest tenth.

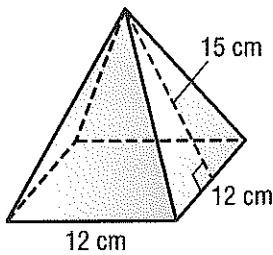


- F.  $24.0 \text{ m}^2$
- G.  $27.5 \text{ m}^2$
- H.  $31.1 \text{ m}^2$
- I.  $38.1 \text{ m}^2$

50. Christy drove 132 miles in  $2\frac{3}{4}$  hours. What was her average speed in miles per hour?

- A. 48 miles per hour
- B. 46 miles per hour
- C. 44 miles per hour
- D. 42 miles per hour

51. The square pyramid has base side lengths of 12 centimeters and a slant height of 15 centimeters. What is the total surface area of the pyramid?



- F.  $720 \text{ in}^2$
- G.  $640 \text{ in}^2$
- H.  $504 \text{ in}^2$
- I.  $360 \text{ in}^2$

52. Suppose the length of each side of a square is decreased by 4 feet. If the perimeter of the square is now 32 feet, what was the original length of each side?

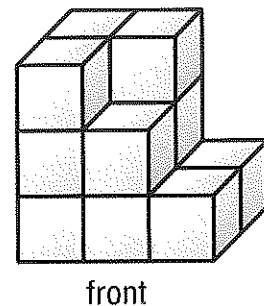
- A. 48 ft
- B. 44 ft
- C. 16 ft
- D. 12 ft

53. Which of the following is the simplest form of the algebraic expression shown below?

$$-11g + 5 + 6g - 2$$

- F.  $-6g + 4$
- G.  $-6g + 5$
- H.  $-5g + 5$
- I.  $-5g + 3$

54. **SHORT ANSWER** Jamal built the three dimensional figure below using blocks. Front Sketch the front, side, and top views of the figure.

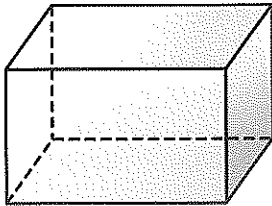


# Mathematics Summer Work 2019 *(continued)*

55. Which of the following represents two dependent events?

- A. drawing a card from a deck, not replacing it, and drawing another card
- B. rolling a number cube and flipping a coin
- C. drawing a card from a deck, replacing it, and drawing another card
- D. rolling two numbers cubes

56. Select the shape resulting from a horizontal cross section of the rectangular prism?



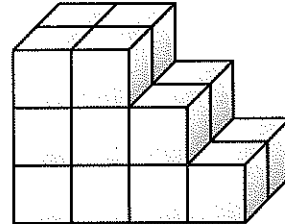
- F. rectangle
- G. oval
- H. triangle
- I. trapezoid

57. What is the solution to the equation?

$$4(x + 1) = -16$$

- A. -3
- B. -5
- C. -63
- D. -65

58. **SHORT ANSWER** Find the volume and surface area of the composite figure shown below if the figure is built with unit cubes.



59. Which operation should be performed last to solve the inequality below?

$$-7x + 4 > -10$$

- F. add 4 to each side
- G. subtract 4 from each side
- H. multiply each side by  $-7$  and reverse the inequality symbol
- I. divide each side by  $-7$  and reverse the inequality symbol

60. What is the product of the expression?

$$-7(-3)$$

- A. -21
- B. -10
- C. 10
- D. 21

**Mathematics Summer Work (Incoming 8th Grade)**

Please bubble in the correct answer for multiple choice items and write your response to the short answer items in the space provided. If more space is needed please number and complete on the back of this sheet.

Name: \_\_\_\_\_

- |   |   |   |
|---|---|---|
| 1. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D  | 23. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 43. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D |
| 2. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I  | 24.   | 44.   |
| 3.  | 25. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 45. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I |
| 4. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D  | 26. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 46. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D |
| 5. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I  | 27.   | 47. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I |
| 6. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D  | 28. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 48. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D |
| 7.  | 29. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 49. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I |
| 8. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I  | 30. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 50. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D |
| 9. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D  | 31. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 51. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I |
| 10. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 32.   | 52. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D |
| 11. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 33. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 53. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I |
| 12. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 34. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 54.   |
| 13. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 35. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 55. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D |
| 14.   | 36.   | 56. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I |
| 15. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 37. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 57. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D |
| 16. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 38. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 58.   |
| 17. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 39.   | 59. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I |
| 18. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 40. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 60. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D |
| 19. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I | 41. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D |   |
| 20. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D | 42. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I |   |
| 21. <input type="radio"/> F <input type="radio"/> G <input type="radio"/> H <input type="radio"/> I |   |   |
| 22. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D |   |   |