

No calculator is allowed. Write the letter of the answer you choose on the provided answer form.
Note that, all the questions are single-choice questions.

1. The 14 digits of a credit card are written in the boxes shown. If the sum of any three consecutive digits is 20, what is the value of A?

A		7									7		4
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Which of the following problem-solving strategies would be most appropriate to use to solve this problem?

- A) Work backwards
- B) Draw a diagram
- C) Examine a Simpler Case
- D) Set Up an Equation

2. Brett built a tower using four different colored milk cartons. The red carton was below the green carton. The blue carton was above the yellow carton which was above the green carton. Which carton is On top?



Which of the following problem-solving strategies would be most appropriate to use to solve this problem?

- A. Work backwards
- B. Draw a diagram
- C. Set up an equation
- D. Find a pattern

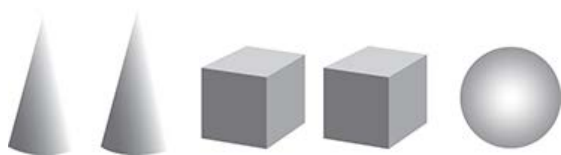
3. To calculate 79×99 , Derrick rewrote it as $79 \times (100-1)$, and calculated it as $79 \times 100 - 79 \times 1 = 7900 - 79 = 7821$. Which operation property did Derrick apply?

- A. Commutative property of multiplication
- B. Associative property
- C. Distribution property of multiplication over subtraction
- D. Identity property

4. What is an expression for the number of cents in P pennies and Q quarters?

- A. $P + Q$
- B. $P + 5Q$
- C. $5P + Q$
- D. $P + 25Q$
- E. $25(P + Q)$

5. Use the diagram below to answer the question that follows (resource from NY multiple-subject sample question).



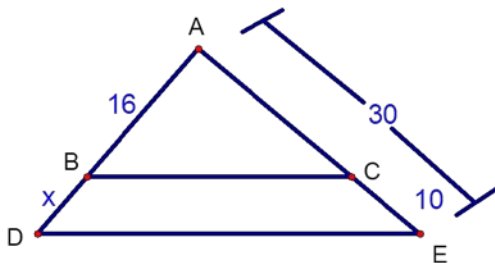
A teacher places a set of blocks on a table and asks a child how many blocks there are. The child points to each block while saying the numbers in the proper sequence from one through five. When asked again how many blocks there are, the child responds by counting the number of blocks again. Given this evidence, which question could the teacher ask to help the child connect counting to cardinality?

- A. How many cones, boxes, and balls are there?
- B. How is the last number name you said related to the number of blocks?
- C. How many different types of shapes are there?
- D. How is the first block counted similar to the last block counted?

6. Jevasiah had $\frac{3}{5}$ of a pound of blueberries. Jevasiah let a teacher, Ms. Schofield, eat $\frac{1}{3}$ of the blueberries. How many pounds of blueberries did Ms. Schofield eat?

- A. $\frac{1}{3}$
- B. $\frac{3}{15}$
- C. $\frac{4}{15}$
- D. $\frac{7}{15}$

7. In the diagram, $BC \parallel DE$, what is the length of BD?



- A. 8
- B. $\frac{16}{3}$
- C. 16
- D. 10

8. Brenda sells ice cream cones. They come in the flavors: vanilla, chocolate, cherry, and strawberry. Cones come in 2 sizes: small and large. Ruth buys a cone. What is the probability that it is a small cherry cone?

- A. $\frac{1}{4}$
- B. $\frac{1}{6}$
- C. $\frac{1}{8}$
- D. $\frac{4}{8}$

9. Which is NOT a property of rectangles?

- A. All its sides are congruent
- B. The sum of its angles is 360°
- C. It is a quadrilateral.
- D. It has opposite sides that are parallel
- E. It is a polygon.

10. $2^6 \div 2^{-2} =$

- A. 2^4
- B. 2^3
- C. 2^8
- D. 2^{12}

11. Sophia just bought two New York State lottery tickets. The prize this week is ten and one-half million dollars more than last week. Last week's prize was \$30,500,000. What is the price for this week?

- A. \$40 million B. \$42,000, 000 C. \$41 million D. \$40,550,000 E. \$31,500,000

12. Using an area model for $(10+3) \times (10+2)$ as shown in below, what is the value for the unknown area?

- A. 10 B. 3 C. 2 D. 6

	10	3
10	100	30
2	20	?

13. How many decimals in the box have a digit "3" in the tenths place and are larger than $1\frac{1}{2}$?

- A. one B. two C. three D. four E. none

31.31		.931
3.23	1.3	
2.35	123	.303

14. Which statement is correct?

- A. $2.5 = 2\frac{1}{5}$ B. $0.025 = \frac{25}{100}$ C. $0.4 = \frac{4}{40}$ D. $0.06 = \frac{6}{100}$ E. $0.05 = \frac{50}{100}$

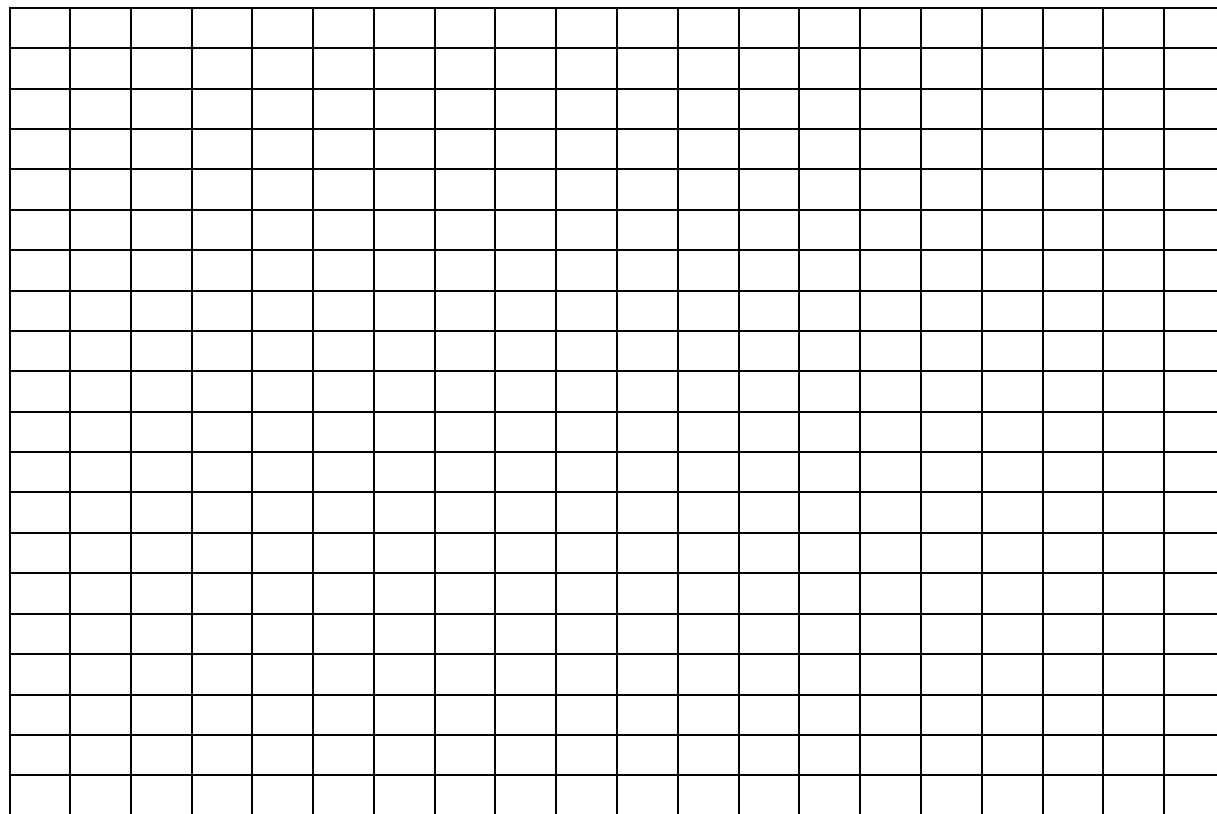
15. Joey loves to bowl. His average for four games was 200. He bowled 180 in the first game and 20 points higher in the second game. He bowled 180 again in the third game. What did Joey bowl in the last game?

- A. 200 B. 210 C. 180 D. 240

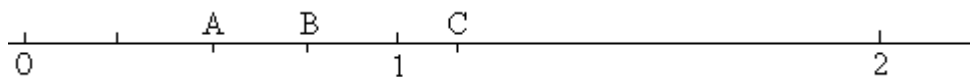
16. Sketch a graph for $x + y = 5$ (use the table and grid in the next page). Which characteristics does the graph have?

- A. a straight line that goes through the origin
 B. a straight line that intersects at y-axis
 C. a hyperbola
 D. a vertical line that parallels y-axis and goes through (0, 5)

x	-1	...					
y	6	...					



17. Which statement is correct about the number line?



I. Point A is about .49 II. Point B is about $\frac{3}{4}$ III. Point C is about 1.4

A. Only I B. Only I and II C. Only I and III D. Only II and III

18. At her country house, Rosa has a square flower garden. She puts 200 feet of new fence all the way around the garden to keep her granddaughter, Mia, out of the garden. How many square feet of space does her garden have?

A. 200 B. 1,000 C. 250 D. 2,500

19. Which of the following is the simplified form for $\frac{24}{84}$?

A. $\frac{4}{7}$ B. $\frac{2}{7}$ C. $\frac{12}{42}$ D. $\frac{12}{14}$

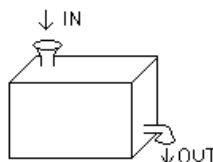
20. There are approximately 2lb of muscle for every 5lb of body weight. For a 100lb person, approximately how much of the weight is muscle?

A. 45lb B. 25lb C. 250lb D. 40lb

21. The table shows how OUT values are related to IN numbers. Which rule tells how to find the OUT number for any IN number, X?

- A. $X + 5$ B. $2(X - 1)$
C. $(X - 1) + X$ D. $X + 3$

IN	OUT
4	7
6	11
20	39
X	?

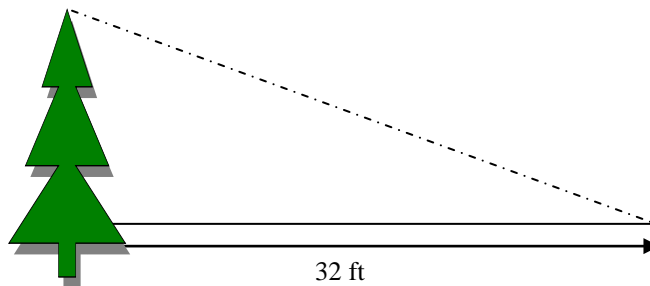
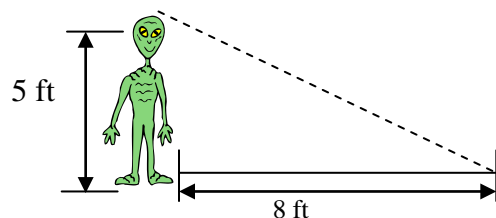


22. Prof Reid is buying a new fuel efficient Honda Prius as his family car. Rounded to the nearest thousand, it costs \$23,000. How many amounts of money in the box could be the price of his new car?

- A. none B. one C. two D. three E. four

\$23,099	\$22,610	\$23,810
\$24,199	\$23,256	\$22,099

23. Lance the alien is 5 feet tall. His shadow is 8 feet long.



At the same time of day, a tree's shadow is 32 feet long. What is the height of the tree?

- A. 20 feet B. 24 feet C. 29 feet D. 51 feet

24. $\frac{X}{10}$ is between $\frac{1}{5}$ and .6 What could the value of X be?

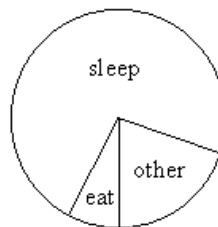
- A. 1 B. 2 C. 5 D. 8 E. 10

25. There are 420 pupils in a school. The ratio of boys to girls in this school is 3:4, and $\frac{2}{5}$ of the girls in the school are registered in an after school program. About how many girls are in the after school program?

- A) 72 B) 96 C) 122 D) 125

26. About how much of the day is Karen's cat awake?

- A. 50% B. 30% C. 66% D. 90%

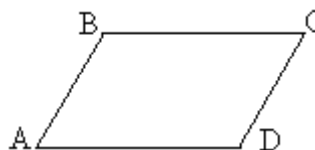


27. Two cubes have sides of lengths 2cm and 3cm, respectively. What is the ratio of their volume?

- A. 8 : 27 B. 4 : 9 C. 2 : 3 D. 4 : 6

28. Which statement is correct about this shape?

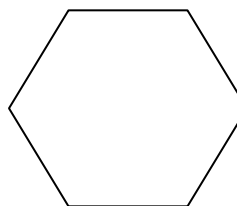
- I. It has two acute angles
II. Its two diagonals will be equal in length
III. It is a prism



- A. Only I B. Only II C. Only III D. Only I and II E. I, II, and III

29. How many lines of symmetry does the following hexagon have?

- A. 3 B. 4 C. 5 D. 6

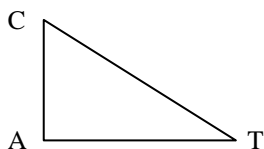


30. Barbara buys a new computer at PCWorld in New Jersey. The original price of the computer was \$1,000. But, it was on sale for 30% off. She also got an additional \$50 off because she was a teacher. How much did she pay for the computer, including the 5% sales tax?

- A. \$700.00 B. \$735.00 C. \$650.00 D. \$682.50 E. \$938.50

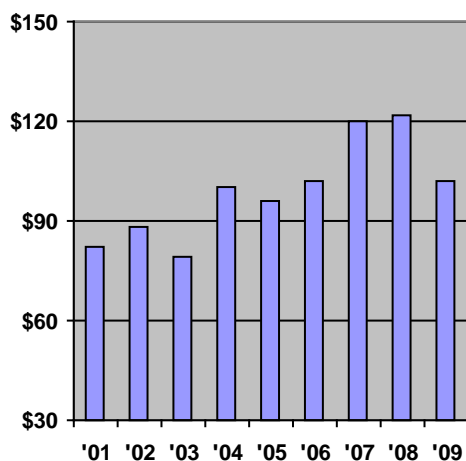
31. Side CA of the right triangle CAT is 3cm long. The hypotenuse is 5cm long. How many square centimeters is the area of CAT?

- A. 4 B. 6 C. $7\frac{1}{2}$ D. 12 E. 60



32. Do you spend money on Valentine's day? Based on the graph, which statement is NOT correct?

- A. Spending increased from 2006 to 2007.
- B. Spending in 2005 was less than spending in the year before that.
- C. Spending in 2007 was about \$120 per person.
- D. Spending decreased by almost \$50 from 2008 to 2009.
- E. Spending in 2009 was about the same as spending in 2004.



33. Given that p and q are distinct prime numbers greater than 2, which of the following could be a whole number (resource from NY multiple-subject sample question; hint: plug in numbers and try out)?

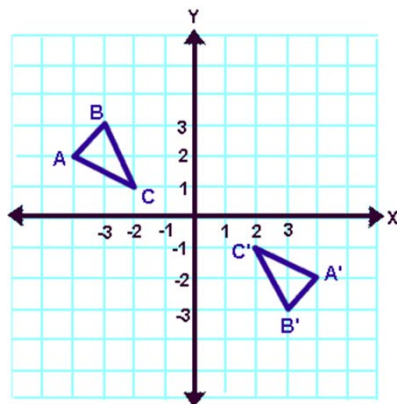
- A. $\frac{2p}{q}$
- B. $\frac{p^2}{q}$
- C. $\frac{p}{q+1}$
- D. $\frac{p+1}{q-1}$

34. Which is NOT a property of a cube?

- A. it has 6 faces
- B. it has 6 corners
- C. it has 12 edges
- D. it has 8 vertices

35. The graph below shows an example of a transformation. Which transformation is shown?

- A. Translation
- B. Reflection in origin
- C. Rotation
- D. Dilation



Answer Key

1A	2B	
3C	4.D	5B
6B	7A	8C
9A	10C	11C
12D	13B	14D
15D	16B	17B
18D	19B	20D
21C	22D	23A
24C	25B	26B
27A	28A	29D
30D	31B	32D
33D	34B	35B