Directions: Read each of the following questions carefully and choose the best answer.

A.CED.1

1) Which of the following tables represents a linear relationship?

a.

x	y
1	6
2	9
3	12
4	15

b.

x	y
1	6
2	9
3	13.5
4	20.25

c.

x	y
1	56
2	28
3	14
4	7

2) Using the tables in question #1, how do you know which table represents a linear relationship?

   a. When the y-value increases, then the relationship is linear.
   b. When the y-value decreases, then the relationship is linear.
   c. When the slope or rate of change is the same at every point, then the relationship is linear.
   d. You cannot determine from the table if the relationship is linear.

A.CED.1, A.CED.2

Use the following scenario to answer questions 3-7.

Rachel is getting married, but she is on a budget. She is buying her invitations and has narrowed it down to two stores, *Party Time* and *I Do Bridal*. *Party Time* charges a $20 set up fee and then $1.50 per invitation. *I Do Bridal* charges a $40 set up fee and then $1.00 per invitation.

3) Create a mathematical model (equation) to represent the total cost if Rachel bought her invitations from Party Time. Let x represent the number of invitations.

   a. $Party\ Time\ cost = 20x$
   b. $Party\ Time\ cost = 20 + 1.5x$
   c. $Party\ Time\ cost = 1.5x$
   d. $Party\ Time\ cost = 40 + 1.5x$

4) Create a mathematical model (equation) to represent the total cost if Rachel bought her invitations from I Do Bridal. Let x represent the number of invitations.

   a. $I\ Do\ Bridal\ cost = x$
   b. $I\ Do\ Bridal\ cost = 40x$
   c. $I\ Do\ Bridal\ cost = 40 + x$
   d. $I\ Do\ Bridal\ cost = 20 + x$

5) If Rachel had a small wedding and only needed 35 invitations, which store would you recommend to her and why? **(A. CED.3)**

a. I Do Bridal because it is cheaper than Party Time if Rachel buys less than 40 invitations.
b. I Do Bridal because it will always be cheaper than Party Time.
c. Party Time because it is cheaper than I Do Bridal if Rachel buys less than 40 invitations.
d. It does not matter because they would cost the same amount.

6) Write an inequality to represent when it would be cheaper to use I Do Bridal. Let x represent the number of invitations. **(A.CED.3)**

a. $x > 40$
b. $x < 40$
c. $x \geq 40$
d. $x \leq 40$

7) The sum of two times an integer and 64 is less than 100. What is the greatest number that integer can be? **(A.CED.1)**

a. 0
b. 18
c. 20
d. 17

8) Ryan and Rhonda went on a road trip. They drove a total of 90 miles. Ryan drove the car twice as many miles at Rhonda drove the car. For how many miles did Ryan drive?

a. 30 miles
b. 90 miles
c. 60 miles
d. 120 miles

9) The relationship in the following table is linear. Determine the equation of this line. **(A.CED.2)**

x	**y**
3	10
4	6
5	2
6	-2

a. $y = -4x + 22$
b. $y = x - 4$
c. $y = 4x + 10$
d. $y = x + 7$

10) It takes Darren 3 hours and 10 minutes to get home from college. Lexie's drive is one hour and 30 minutes shorter than Darren's. How many more minutes does Darren have to drive than Lexie? **(N.Q.2, N.Q.3)**

a. 90 minutes
b. 100 minutes
c. 60 minutes
d. 30 minutes

Use the following scenario below to answer questions 11-12.

Kaycie has just bought a new candle. It is 20 cm tall. The box says that the candle burns 1.5 cm per hour that it is lit. (A.CED.2)

11) How long will it take the candle to burn all the way down?

a. Between 10 and 11 hours
b. Between 15 and 16 hours
c. Between 13 and 14 hours
d. Between 7 and 8 hours

12) Create an equation that represents the height of the candle over time. Let x be the number of hours.

a. $height = 1.5x$
b. $height = 20 + 1.5x$
c. $height = 20x$
d. $height = 20 - 1.5x$

13) Johnny mows lawns to earn some extra money during the summer. He charges $5 per hour. Write an equation to represent the relationship between the number of hours and the total cost.

a. $y = 5$
b. $y = 5x$
c. $y = x + 5$
d. $y = -5$

14) Tonya wants to join a gym and goes to the BodyPlex down the street to do some research. She finds that they are doing a special. If she joins today, then it will only cost her a $10 membership fee and then $15 per month. Create an equation to represent the relationship between the number of months and the total cost.

a. $y = 15 + 10x$
b. $y = 15x$
c. $y = 10x$
d. $y = 10 + 15x$

(A.CED.1)

15) Solve for x: $4x - 2 = 5x + 8$

a. $x = -10$
b. $x = 6$
c. $x = 10$
d. $x = \frac{2}{3}$

16) Solve the following inequality for y: $-2y + 1 < 17$

a. $y = -8$
b. $y < -8$
c. $y < 8$
d. $y > -8$

17) Solve this equation: $7y + 1 = 29$.

a. $y = 7$
b. $y = \frac{30}{7}$
c. $y = 4$
d. $y = 3$

18) What is the greatest integer that *x* can be to satisfy the following inequality? $3x - 5 \leq 13$. **(A.CED.1)**

a. 6
b. 5
c. 13
d. 3

19) The formula for the area of a triangle is $\boldsymbol{A = \frac{b \times h}{2}}$, where *b* is the base and *h* is the height. Rearrange this formula to highlight *b*. **(A.CED.4)**

a. $2A - h = b$
b. $\frac{2A}{h} = b$
c. $\frac{2A}{b} = h$
d. $\frac{A}{h} = b$

20) Jackie is baffled by the formula she was told to rearrange. It is the formula for the perimeter of a rectangle: $P = 2l + 2w$, where *l* is the length and *w* is the width. Jackie is supposed to solve for *w*. Help her out by telling her the first thing she should do. **(A.CED.4)**

a. She should subtract $2l$ from both sides.

b. She should subtract $2w$ from both sides.
c. She should divide by l on both sides.
d. This formula can NOT be rearranged to solve for w.

21) Which equation represents the phrase “six more than twice a number is 72”? **(A.CED.1)**
a. $6 + x = 72$
b. $2x = 6 + 72$
c. $2 + 6x = 72$
d. $6 + 2x = 72$