1. A system of linear equations is shown below.
    $$2x+3y=9$$
DOK: $$-2x-2y=-10$$
    What is the solution to the system of equations?

    A. $(-1,-6)$ B. $(6,-1)$

    C. $(3,1)$ D. $(-3,5)$

2. Solve for x.
    $$-mx+6>-2$$
DOK:
    A. $x<\dfrac{8}{m}$ B. $x>-\dfrac{8}{m}$

    C. $x<-8$ D. $x>8$

3. A linear equation and its solution are shown below.
    $$-x-5=2$$
DOK: $$Step 1: -x=7$$
    $$Step 2: x=-7$$
    Which property allows the addition of 5 to both sides in Step 1?

    A. Subtraction property of equality   B. Reflexive property of equality

    C. Addition property of equality   D. Transitive property of equality

4. Nick is participating in a walkathon to raise money for a local hospital. One of his neighbors
    pledged to donate $5 initially and add $2 for every lap around the track that Nick completes.
DOK: What is the minimum number of laps that he must walk so that his neighbor will donate at
    least $25?

    A. 5 laps   B. 10 laps

    C. 15 laps   D. 20 laps

5.   Solve for x.
        $-3x-4\geq-2x-6$

DOK: A. $x\leq-2$ B. $x\geq-2$

            C. $x\leq2$ D. $x\geq2$
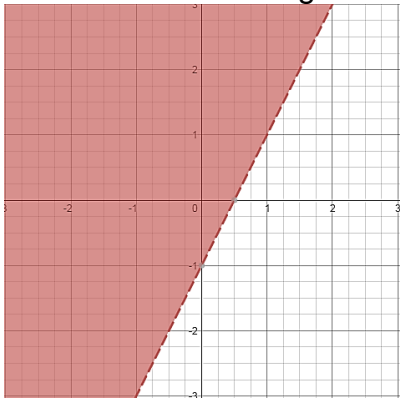

6.   Which of the following is a solution to the inequality graphed below?

DOK:

            A.   (0,0)   B.   (1,1)

            C. (0,-2)   D.   (2,0)

7.   At the store, the total cost of 2 apples and 5 oranges is $9.50. The cost of 2 apples and 3
        oranges is $6.50. What are the prices of apples and oranges?
DOK: A.   One apple costs $0.75, and one   B.   One apple costs $1.50, and one
              orange costs $1.20.   orange costs $1.

            C. One apple costs $2, and one orange   D.   One apple costs $1, and one orange
              costs $0.70.   costs $1.50.

8.   Solve for x where $a>0$.
        $ax<-4$
DOK:
            A. $a<-\dfrac{x}{4}$ B. $x<-\dfrac{4}{a}$

            C. $x>-\dfrac{4}{a}$ D. $a<-\dfrac{4}{x}$

9.   Jenny wrote the steps shown below while solving the equation $5x+3=18$

DOK:
$$5x+3=18$$
$$5x=15$$
$$1x=3$$
$$x=3$$

Which step is justified by the multiplicative identity property?
A.   Subtract 3 from both sides   B.   Divide both sides by 5

C. Divide both sides by 3   D.   Rewrite $1x=3$ as $x=3$

10.   Which is a solution to the system of inequalities shown below?
$$y\geq-x+4$$
DOK: $y<2x+3$
A. $(-2,0)$ B. $(0,0)$

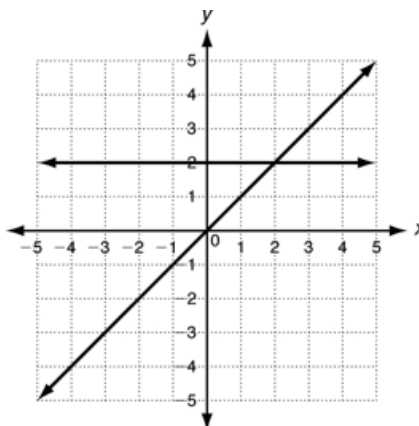C. $(4,0)$ D. $(-4,4)$

11.   The graph of a system of equations is shown below.

DOK:

What is the solution to the system?
A. $(0,2)$ B. $(2,0)$
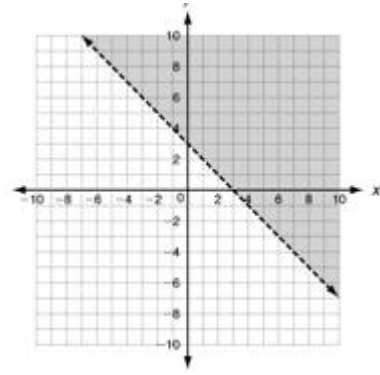
C. $(2,2)$ D.   Infinitely many solutions

Unit 2: Reasoning with Equations and Inequalities

12.   Which inequality is shown by the graph?

    A. $y>-x+3$ B. $y<-x+3$

    C. $y\geq-x+3$ D. $y\leq-x+3$

13.   You must have at least $15 to go to the movies. Which inequality shows the amount of money you must have to go to the movies?
DOK: A. $m<15$ B. $m>15$

       C. $m\leq15$ D. $m\geq15$

14.   Joe is paying off a loan on a car for $20,000. He pays $400 a month. It can be modeled by the equation $f(x)=-400x+20000$. What does the y-intercept represent?
DOK: A. The amount he pays each month   B. The original amount of the loan

       C. How long it will take him to pay off the   D. How much money he has remaining to
          loan   pay

15.   How many solutions does the following inequality have:
       $x-1>x+4$
DOK: A. One   B. Two

       C. None   D. Infinitely many

16.   Solve the system of equations shown below:
       $\begin{cases}-x+y=1\\x+y=3\end{cases}$.
DOK:
          A. $(1,2)$ B. $(2,1)$

          C. $(0,4)$ D. $(4,0)$

17.   To get a special deal at the bookstore, a customer must spend more than $40. Sean is
       planning on buying a movie for $16 and some books, b, that cost $8 each. The inequality
DOK: he wants to use to see how many books he needs to buy is $8b+16>40$. Which number of
       books will not allow Sean to get the special deal?
           A.   3 books   B.   4 books

           C. 6 books   D.   7 books

18.   Put the following equation in slope intercept form:
       $4x+2y=8$
DOK: A. $y=-4x+8$ B. $y=2x+4$

           C. $y=-2x+4$ D. $y=-2x-4$

19.   Renting a canoe costs an initial $10 fee as well as $8 per hour. If c represents the cost of a
       canoe rental and t represents the number of hours of the rental, which of the following
DOK: equations best models this scenario?
           A. $c=8t+10$ B. $c=10t+8$

           C. $t=8c+10$ D. $t=10c+8$

20.   Owen works as a translator of literature. He gets paid different amounts for translating
       articles and for translating book chapters, but he is unsure exactly how much he gets paid
DOK: for each task. In January, he was paid $340 for translating 3 book chapters and 2 articles.
       In February, he was paid $380 for translating 1 book chapter and 6 articles. Write and solve
       a system of equations to find out how much he is paid for each.
           A. $65 for each book chapter and $70   B. $70 for each book chapter and $65 for
                for each article   each article

           C. $80 for each book chapter and $50   D. $50 for each book chapter and $80 for
                for each article   each article

Unit 2: Reasoning with Equations and Inequalities

ANSWERS Unit 2:

1) B	11) C
2) A	12) A
3) C	13) D
4) B	14) B
5) C	15) C
6) A	16) A
7) D	17) A
8) B	18) C
9) D	19) A
10) C	20) C

ANSWERS Unit 2:

1) B	11) C
2) A	12) A
3) C	13) D
4) B	14) B
5) C	15) C
6) A	16) A
7) D	17) A
8) B	18) C
9) D	19) A
10) C	20) C

ANSWERS Unit 2:

1) B	11) C
2) A	12) A
3) C	13) D
4) B	14) B
5) C	15) C
6) A	16) A
7) D	17) A
8) B	18) C
9) D	19) A
10) C	20) C

ANSWERS Unit 2:

1) B	11) C
2) A	12) A
3) C	13) D
4) B	14) B
5) C	15) C
6) A	16) A
7) D	17) A
8) B	18) C
9) D	19) A
10) C	20) C