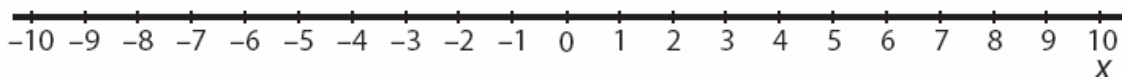Name:

QUIZ – MATH GRADE 11 SL
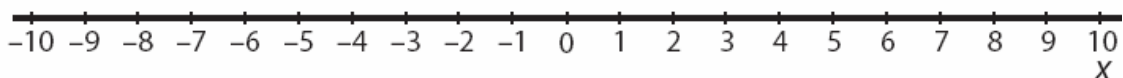
1. (4%) Show the following interval on the number line: $x \in (-2,5]$
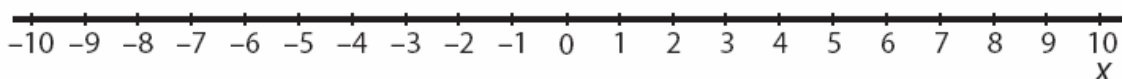
```
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9  10
                                                                X
```
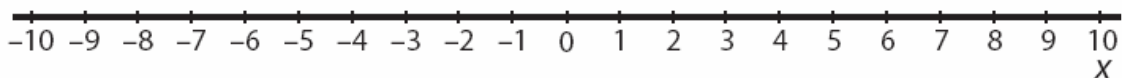
2. (4%) Show the following interval on the number line: $x > 2$

```
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9  10
                                                                X
```

3. (4%) Show the following interval on the number line: $x \in [-6,-1[$

```
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9  10
                                                                X
```

4. (4%) Show the following interval on the number line: $-\infty < x \le 0$

```
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9  10
                                                                X
```
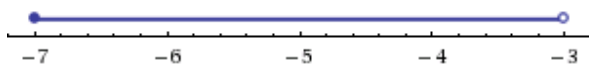
5. (4%) Write down in 2 different notations the interval on the number line:

```
        -6    -4    -2     0     2     4     6
```
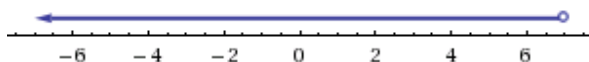
(I)_____

(II)_____

6. (4%) Write down in 2 different notations the interval on the number line:

```
   -7         -6         -5         -4         -3
```
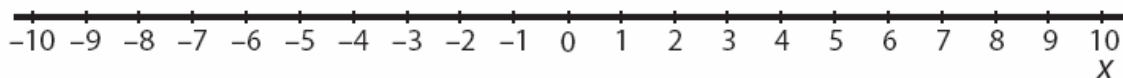
(I)_____

(II)_____

7. (40%) Solve the inequalities:

   a. (8%) $-3x + 1 \le 7$

   b. (20%) $\dfrac{3x+1}{2} < \dfrac{x}{3} - \dfrac{7}{6}$

   c. (6%) Sketch **both** inequalities on the number line:

```
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9  10
                                                                X
```

   d. (6%) Write down their intersection: _____

1

8. (18%) Solve the inequality: $-6 < \dfrac{4-6x}{4} < 10$ and show it on the number line:

```
 ┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9  10
                                                             X
```
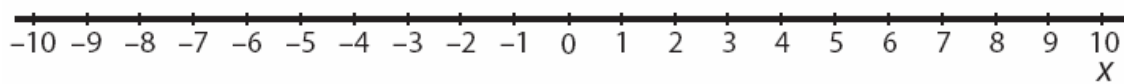
9. (18%) Solve the inequality $\dfrac{x}{2} + 4 < \dfrac{x}{6} + x$ and show it on the number line:

```
 ┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9  10
                                                             X
```

2