Graphing Equations with Limited Domains Answer Key

1.

Domain:	$2 \le x < 8$
Lower Limit:	$x = 2$
Open or Closed:	$\le$ has a line, so it's **CLOSED**
Upper Limit:	$x = 8$
Open or Closed:	< no line under, so it's **OPEN**

2.

Domain:	$-3 \le x \le -1$
Lower Limit:	$x = -3$
Open or Closed:	$\le$ has a line, so it's **CLOSED**
Upper Limit:	$x = -1$
Open or Closed:	$\le$ has a line, so it's **CLOSED**

3.

Domain:	$-6 < x \le 0$
Lower Limit:	$x = -6$
Open or Closed:	< no line under, so it's **OPEN**
Upper Limit:	$x = 0$
Open or Closed:	$\le$ has a line, so it's **CLOSED**

4.

Domain:	$-8 < x < 1$
Lower Limit:	$x = -8$
Open or Closed:	< no line under, so it's **OPEN**
Upper Limit:	$x = 1$
Open or Closed:	< no line under, so it's **OPEN**

5.

Domain:	$x < 0$
~~Lower Limit:~~	*x is "less than…" – it keeps getting smaller*
~~Open or Closed:~~	
Upper Limit:	$x = 0$
Open or Closed:	< no line under, so it's **OPEN**

6.

Domain:	$x \ge -9$
Lower Limit:	$x = -9$
Open or Closed:	$\ge$ has a line, so it's **CLOSED**
~~Upper Limit:~~	*x is "greater than…" – it keeps getting bigger*
~~Open or Closed:~~	

7.

Domain:	$x > 8$
Lower Limit:	$x = 8$
Open or Closed:	> no line under, so it's **OPEN**
~~Upper Limit:~~	*x is "greater than…" – it keeps getting bigger*
~~Open or Closed:~~	

8.

Domain:	$x \le 4$
~~Lower Limit:~~	*x is "less than…" – it keeps getting smaller*
~~Open or Closed:~~	
Upper Limit:	$x = 4$
Open or Closed:	$\le$ has a line, so it's **CLOSED**

9. $h(x)$
Lower limit: $(-2, 3)$
This point is **CLOSED**,
because there **IS a line** under the symbol
$$(-2 \le x \dots)$$

Upper limit: $(0, -1)$
This point is **OPEN**,
because there **IS NOT a line** under the symbol
$$(\dots x < 0)$$

10. $j(x)$
Lower limit: $(0, -3)$
This point is **CLOSED**,
because there **IS a line** under the symbol
$$(0 \le x \dots)$$

Upper limit: $(5, -3)$
This point is **CLOSED**,
because there **IS a line** under the symbol
$$(\dots x \le 5)$$

11. $k(x)$

Lower limit: $(5,1)$
This point is **OPEN**,
because there **IS NOT a line** under the symbol
$$(x > 5)$$

Upper limit: **There is no upper limit.**

x is greater than 5, which means it keeps getting bigger, so you can plug in any other x's that you want, as long as they're bigger than 5.

The other possible correct points:
$$(6, 2)$$
$$(7, 3)$$
$$(8, 4)$$
$$(9, 5)$$
$$(10, 6)$$
$$\dots$$

Graph for #9-#11: