Name_____ Date_____

Are You the Solution? Answers

1. $x - 6 \leq 2$

$x - 6 + 6 \leq 2 + 6$

$x \leq 8$

Choose a value less than 8: $x = 4$

L.S. $= x - 6$ \qquad R.S. $= 2$

$= 4 - 6$

$= -2$

$-2 \leq 2$, so the solution is correct.

2. $-2x > 32$

$\dfrac{-2x}{-2} < \dfrac{32}{-2}$
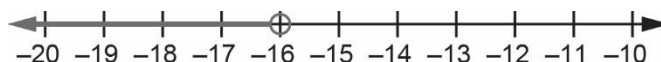
$x < -16$

Choose a value less than -16: $x = -20$

L.S. $= -2x$ \qquad R.S. $= 32$

$= -2(-20)$

$= 40$

$40 > 32$, so the solution is correct.

3. $-\dfrac{p}{8} < 2$

$8 \times \left(-\dfrac{p}{8}\right) < 2 \times 8$

$-p < 16$
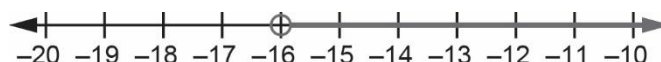
$p > -16$

Choose a value greater than -16: $p = 0$

L.S. $= -\dfrac{p}{8}$ \qquad R.S. $= 2$

$= -\dfrac{0}{8}$

$= 0$

$0 < 2$, so the solution is correct.

4. $q - 3.2 \geq 2.5$

$q - 3.2 + 3.2 \geq 2.5 + 3.2$

$q \geq 5.7$

Choose a value greater than 5.7: $q = 6$

L.S. $= q - 3.2$ \qquad R.S. $= 2.5$

$= 6 - 3.2$

$= 2.8$

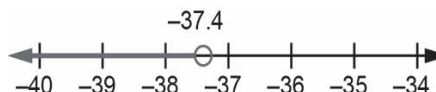$2.8 \geq 2.5$, so the solution is correct.

Name_____   Date_____

5.
$$2y + 13.3 < y - 24.1$$
$$2y + 13.3 - 13.3 < y - 24.1 - 13.3$$
$$2y < y - 37.4$$
$$2y - y < y - y - 37.4$$
$$y < -37.4$$

Choose a value less than –37.4: $y = -40$

L.S. $= 2y + 13.3$ R.S.$= y - 24.1$
$= 2(-40) + 13.3$ $= -40 - 24.1$
$= -66.7$ $= -64.1$

–66.7 < –64.1, so the solution is correct.

–37.4 number line from –40 to –34

6.
$$9.5 - 2.5a > 16$$
$$9.5 - 2.5a + 2.5a > 16 + 2.5a$$
$$9.5 > 16 + 2.5a$$
$$9.5 - 16 > 16 - 16 + 2.5a$$
$$-6.5 > 2.5a$$
$$\frac{-6.5}{2.5} > \frac{2.5a}{2.5}$$
$$-2.6 > a$$
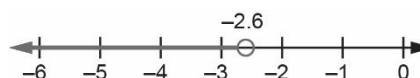
Choose a value less than –2.6: $a = -4$

L.S. $= 9.5 - 2.5a$ R.S.$= 16$
$= 9.5 - 2.5(-4)$
$= 19.5$

19.5 > 16, so the solution is correct.

–2.6 number line from –6 to 0

7. Let p represent the length of pipe used, in metres.
$$35 - p \geq 7$$
$$35 - p + p \geq 7 + p$$
$$35 \geq 7 + p$$
$$35 - 7 \geq 7 - 7 + p$$
$$28 \geq p$$

number line from 20 to 30

They could have used a length of 28 m or less (but greater than 0 m).

8. Let t represent the time, in minutes, spent on social media each weekday.
$$5t + 127 < 562$$
$$5t + 127 - 127 < 562 - 127$$
$$5t < 435$$
$$\frac{5t}{5} < \frac{435}{5}$$
$$t < 87$$

number line from 80 to 90
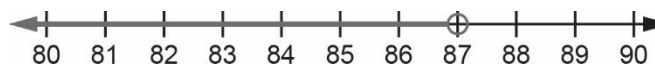
They could spend any time less than 87 min on social media each weekday.