$2x-1>0$ | $4x>0$

$+1 \quad +1$ | $\frac{4}{4} \quad \frac{4}{4}$

$\frac{2x}{2} > \frac{1}{2}$ | $x>0$

$x > \frac{1}{2}$

must be greater than 0...

$\log_5(2x-1) > \log_5(4x)$

$2x-1 > 4x$

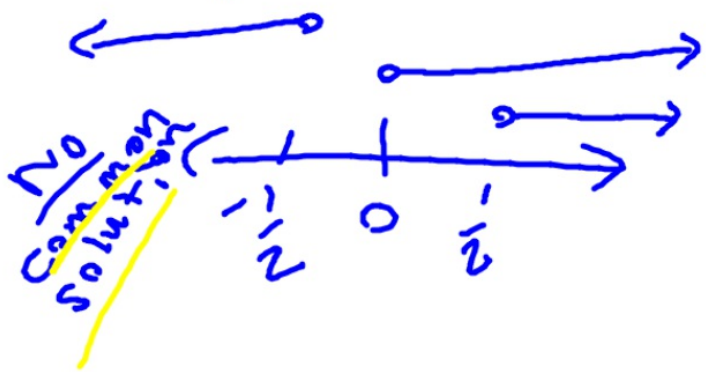
$-2x \quad -2x$

$-1 > \frac{2x}{2}$

$\frac{-1}{2} > x$

$x < -\frac{1}{2}$

8. Solve $\log_5(2x-1) > \log_5(4x)$.



8. No solution

9. _____

9) $y = a \cdot b^x$

$-5 = a \cdot b^0$

$-5 = a \cdot 1$

$a = -5$

$-20 = -5 \cdot b^{-2}$

$\frac{-20}{-5} = \frac{-5 \cdot b^{-2}}{-5}$

$4 = b^{-2}$

$4 = \frac{1}{b^2}$

$\sqrt{b^2} = \sqrt{\frac{1}{4}} = \frac{\sqrt{1}}{\sqrt{4}}$

$b = \frac{1}{2}$

8. Solve $\log_5(2x - 1) \geq \log_5(4x)$.

8. _____

Part II

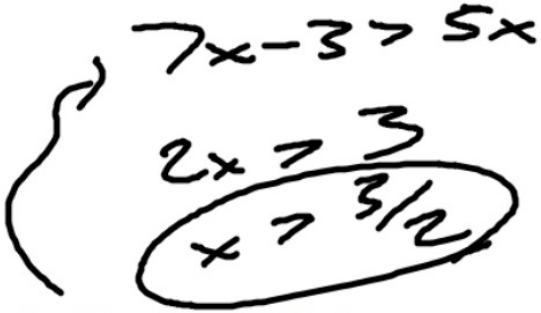
9. Write an exponential function whose graph passes through (0, –5) and (–2, –20).

$y = a \cdot b^x$

9. $y = -5\left(\frac{1}{2}\right)^x$

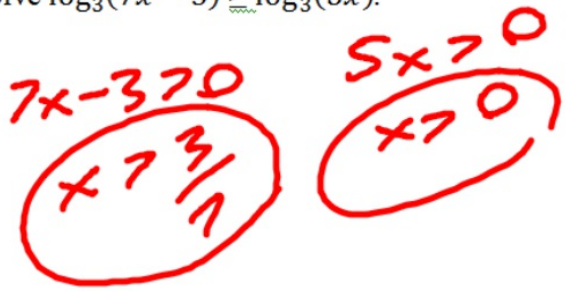
2. Solve $4^{2x} = 8^{x+4}$.

2. _____



5. Solve $\log_3(7x-3) \geq \log_3(5x)$.

5. _____

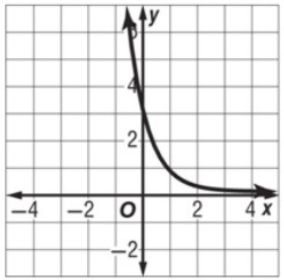


7. Write the equation $\log_7 49 = 2$ in exponential form.

_____

Part I Write the letter for the correct answer in the blank at the right of each question.

1. Find the domain and range of the function shown.



Domain: $\mathbb{R}$ ← "all real numbers"

Range: $y > 0$

1. _____

(4) $\log_4 32 = x$

$4^x = 32$

$(2^2)^x = 2^5$ → $2^{2x} = 2^5$

$2x = 5$

$x = 5/2$

4. Evaluate $\log_4 32$.

4. _____

Part I Write the letter for the correct answer in the blank at the right of each question

2. Solve $4^{2x} = 8^{x+4}$.

$$(2^2)^{2x} = (2^3)^{x+4}$$

$$2^{4x} = 2^{3x+12}$$

$$4x = 3x + 12$$

$$-3x \quad -3x$$

$$x = 12$$

3. Write the equation $4^3 = 64$ in logarithmic form.