L2 Algebra Practice #1

1. Solve: $\log_3(x) = 5$

2. Solve: $5(5 - x) > 2x$

3. Solve: $(x - 5)^2 = 7$

4: Solve: $\frac{x^2 + 6x - 12}{x + 3} = 4$

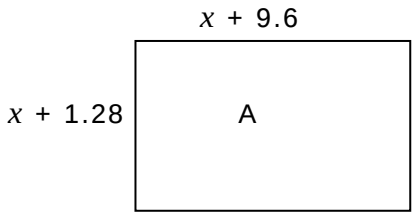
5. Simplify: $\frac{x^2 - 7x + 12}{x^2 - 16}$

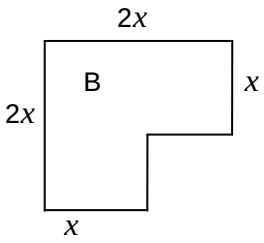
6. Make x the subject of: $4y = \frac{2x - 1}{3}$

7. Simplify: $\sqrt{\frac{16}{x^8}}$

8: For what value of x are the areas of shape A and shape B the same?

(all measurements are cm)





Answers: L2 Algebra Practice #1

1. Solve: $\log_3(x) = 5$ If $y = b^x$ then $\log_b y = x$ So $x = 3^5$ $\boldsymbol{x = 243}$

2. Solve: $5(5 - x) > 2x$ $25 - 5x > 2x$ $25 > 2x + 5x$

So: $\boldsymbol{x < \frac{25}{7}}$ (3.571) (Note direction of sign)

3. $(x - 5)(x - 5) = 7$ $x^2 - 10x + 25 = 7$ $x^2 - 10x + 18 = 0$

from calculator $\boldsymbol{x = 7.646 \text{ and } 2.354}$

4: Solve: $\frac{x^2 + 6x - 12}{x + 3} = 4$ $x^2 + 6x - 12 = 4(x + 3)$ $x^2 + 2x - 24 = 0$

$\boldsymbol{x = 4 \text{ or } -6}$

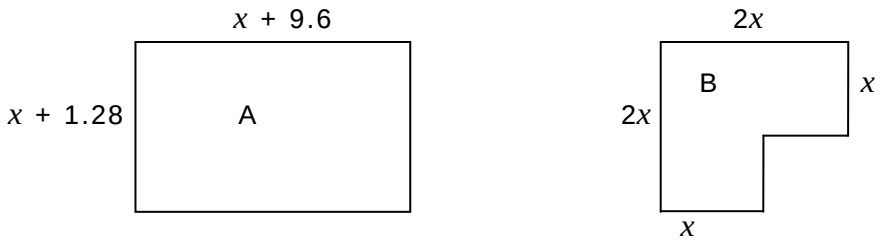
5. Simplify: $\frac{x^2 - 7x + 12}{x^2 - 16} = \frac{(x-3)(x-4)}{(x+4)(x-4)} = \frac{(x-3)\cancel{(x-4)}}{(x+4)\cancel{(x-4)}} = \boldsymbol{\frac{x-3}{x+4}}$

6. $4y = \frac{2x - 1}{3}$ $3 \times 4y = 2x - 1$ $12y + 1 = 2x$

So: $\boldsymbol{x = 6y + ½}$ or $\boldsymbol{x = \frac{12y + 1}{2}}$ (either form)

7. Simplify: $\sqrt{\frac{16}{x^8}} = \frac{\sqrt{16}}{\sqrt{x^8}} = \boldsymbol{\frac{4}{x^4}}$

8.



When $(x + 9.6)(x + 1.28) = 4x^2 - x^2$ $x^2 + 10.88x + 12.288 = 3x^2$

$0 = 2x^2 - 10.88x - 12.288$ Solve on calculator

$\boldsymbol{x = 6.40}$ (answer that $x = -0.96$ makes no sense, so must be discarded)

(Q4 and Q8 are Merit)