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1. (12 marks)

Solve the following

(a) $8 + 2(x - 3) = 2x$

$$8 + 2x - 6 = 2x$$

$$2x = 2x$$

(b) $x^2 - 6x + 8 = 0$

$$x = 2$$

$$= 4$$

$$= 8$$

Solution

(c) $x -$

Check: x

x

Solu

2. (5 marks)

Perform the

$$\frac{x^3 + 4x^2}{2x^2 + 5x - 2}$$

$$= \frac{x^3 + 4x^2}{2x^2 + 5x - 2}$$

$$= \boxed{\frac{\quad}{2x}}$$

3. (4 marks)

Solve the following inequality for x . Write your answer

$$-1 < 2x + 5 \leq 9$$

$$-1 - 5 < 2x \leq 9 - 5$$

$$-6 < 2x \leq 4$$

$$\underline{-3 < x \leq 2}$$

Solution set:

$$\boxed{(-3, 2]}$$

4. (4 marks)

Perform the following polynomial division

$$\frac{x^3 - x^2 - 5x + 9}{x - 3}$$

$$\text{Quotient} = \boxed{x^2 + 2x + 1}$$

$$\text{Remainder} = \boxed{12}$$

$$\frac{x^3 - x^2 - 5x + 9}{x - 3} = \boxed{x^2 + 2x + 1 + \frac{12}{x - 3}}$$

(3)

6. ()
Graph
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$(-2, 4) \rightarrow$

$(-1, 1) \rightarrow$

$(0, 0) \rightarrow$

$(1, 1) \rightarrow$

$(2, 4) \rightarrow$

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9. (6 marks)

Find the domain of each of the f

(a) $f(x) = \frac{\sqrt{x+5}}{x+3}$ He

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(b) $f(x) = \frac{x^3}{x^2+5}$ †

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10. (3 marks)

Write the expression $3 \log$

$$3 \log_2 x + \frac{1}{2} \log_2 ($$

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Solve th

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(b) lo

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$$x = \frac{1}{\tan 54}$$

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18. (6

Perform t

(a) $(1 +$

$(1 + 2$

(b) $\frac{5 - j}{1 +$

$\frac{5 - 2j}{1 + 3j}$

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Find all

Hint: fe

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20. (:

Find the

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Also,

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Quadrant

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