Handout – Functions
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Math 115

Example 1: Find the domain of $f(x) = \sqrt{x+2}$.

a.) The domain of f will only include:

_____

_____

_____

b.) Algebraically, this means:

_____

c.) Create a sign diagram of the expression directly related to (b.).

d.) Use the sign diagram to find the domain f?

Type of Notation	Your Answer:
i.) Graph on a number line	
ii.) Set notation	

e.) Use an English sentence to express the domain in set notation.

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Example 2: Find the domain of $g(x) = \sqrt{x^2 - 9}$.

a.) The domain of g will only include:

_____

_____

_____

b.) Algebraically, this means:

_____

_____

c.) Create a sign diagram of the expression directly related to (b.).

x

d.) Use the sign diagram to find the domain g?

Type of Notation	Your Answer:
i.) Graph on a number line	
ii.) Set notation	

e.) Use an English sentence to express the domain in set notation.

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Example 3: Find the domain of $h(x) = \sqrt{3 + 2x - x^2}$.

a.) Create a sign diagram of the expression directly related to h.

$\longleftarrow\!\!+\!\!\longrightarrow x$

b.) Use the sign diagram to find the domain of h.

Type of Notation	Your Answer:
i.) Set notation	

c.) Use an English sentence to express the domain in set notation.

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Example 4: Find the domain of $k(x) = \sqrt{\dfrac{3 - x}{x + 2}}$.

a.) Create a sign diagram of the expression directly related to k.

$\longleftarrow\!\!+\!\!\longrightarrow x$

b.) Use the sign diagram to express the domain of k in set notation.

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Example 5: Find the domain of $l(x) = \dfrac{x^3 + 4x^2 + 4x}{x^2 - 4x + 3}$.

a.) Create a sign diagram of the expression directly related to l.

b.) Use the sign diagram to express the domain of l in set notation.

Example 6: Create a sign diagram for $m(x) = \sin(x)$.

Example 7: Find the domain of $n(x) = \dfrac{1}{\sin(x)}$.

a.) Create a sign diagram of the expression directly related to n.

b.) Use the sign diagram to express the domain of n in set notation.