

More Increasing and Decreasing Functions Questions

1 Find the values of x for which $f(x)$ is an increasing function, given that $f(x)$ equals:

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|--------------------------------|-----------------------|--------------------------|-------------------------------|
| a $3x^2 + 8x + 2$ | b $4x - 3x^2$ | c $5 - 8x - 2x^2$ | d $2x^3 - 15x^2 + 36x$ |
| e $3 + 3x - 3x^2 + x^3$ | f $5x^3 + 12x$ | g $x^4 + 2x^2$ | h $x^4 - 8x^3$ |

2 Find the values of x for which $f(x)$ is a decreasing function, given that $f(x)$ equals:

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|--------------------------|-----------------------------|--|------------------------------|
| a $x^2 - 9x$ | b $5x - x^2$ | c $4 - 2x - x^2$ | d $2x^3 - 3x^2 - 12x$ |
| e $1 - 27x + x^3$ | f $x + \frac{25}{x}$ | g $x^{\frac{1}{2}} + 9x^{-\frac{1}{2}}$ | h $x^2(x + 3)$ |
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- 1**
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| a $x \geq -\frac{4}{3}$ | b $x \leq \frac{2}{3}$ | c $x \leq -2$ |
| d $x \leq 2, x \geq 3$ | e $x \in \mathbb{R}$ | f $x \in \mathbb{R}$ |
| g $x \geq 0$ | h $x \geq 6$ | |
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- 2**
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| a $x \leq 4.5$ | b $x \geq 2.5$ |
| c $x \geq -1$ | d $-1 \leq x \leq 2$ |
| e $-3 \leq x \leq 3$ | f $-5 \leq x < 0, 0 < x \leq 5$ |
| g $0 < x \leq 9$ | h $-2 \leq x \leq 0$ |
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