

COMPITI PER LE VACANZE ESTIVE
CLASSE 3^A

ESERCIZIO 1 – RISOLVERE LE SEGUENTI DISEQUAZIONI INTERE:

- | | |
|-------------------------------|-------------------------------------|
| 26. $(x+2)(x+3) > 0$ | $[x < -3 \vee x > -2]$ |
| 27. $(x-2)(x+5)(6-x) \geq 0$ | $[x \leq -5 \vee 2 \leq x \leq 6]$ |
| 28. $(x+2)(x+3) \geq 0$ | $[x \leq -3 \vee x \geq -2]$ |
| 29. $(x^2 - 4)(x - 5) \leq 0$ | $[x \leq -2 \vee 2 \leq x \leq 5]$ |
| 30. $(2-x)(x+2) \leq 0$ | $[x \leq -2 \vee x \geq 2]$ |
| 31. $(x^2 + 5x)(7-x) \geq 0$ | $[x \leq -5 \vee 0 \leq x \leq 7]$ |
| 51. $4 - x^2 > 0$ | $[-2 < x < 2]$ |
| 52. $x^2 - 5 > 0$ | $[x < -\sqrt{5} \vee x > \sqrt{5}]$ |
| 53. $x^2 - 4x - 21 < 0$ | $[-3 < x < 7]$ |
| 54. $x^2 - 10x + 25 \leq 0$ | $[x = 5]$ |
| 55. $x^2 + 5x + 6 > 0$ | $[x < -3 \vee x > -2]$ |
| 56. $x^2 - 2x + 2 > 0$ | $[\forall x \in \mathbb{R}]$ |
| 57. $x^2 + 2x + 3 < 0$ | $[\exists x \in \mathbb{R}]$ |

ESERCIZIO 2 – RISOLVERE LE SEGUENTI DISEQUAZIONI FRATTE:

- | | |
|---------------------------------------|----------------------------|
| 75. $\frac{x}{x-2} \geq 0$ | $[x \leq 0 \vee x > 2]$ |
| 76. $\frac{x+2}{x+3} \geq 0$ | $[x < -3 \vee x \geq -2]$ |
| 77. $\frac{x^2}{x^2 - 3x + 2} \geq 0$ | $[x \leq 1 \vee x \geq 2]$ |
| 78. $\frac{x+1}{x+2} > 2$ | $[-3 < x < -2]$ |
| 79. $\frac{x-2}{x} \geq 0$ | $[x < 0 \vee x \geq 2]$ |
| 80. $\frac{1}{x+1} > \frac{2}{x+3}$ | $[x < -3 \vee -1 < x < 1]$ |

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83. $\frac{x^2 + 4x + 4}{x + 1} < 0$

$[x < -1 \wedge x \neq -2]$

84. $\frac{x^2 - 4}{x^2 + 2} > 0$

$[x < -2 \vee x > 2]$

85. $\frac{(2x - 1)^2}{x^2 + 2x} \leq 0$

$[-2 < x < 0, x = \frac{1}{2}]$

86. $\frac{x - 2}{x + 2} > 0$

$[x < -2 \vee x > 2]$

ESERCIZIO 3 – RISOLVERE I SEGUENTI SISTEMI DI DISEQUAZIONI:

117. $\begin{cases} x^2 + 4x > 0 \\ x^2 + 3 < 0 \end{cases}$

$[\exists x \in \mathbb{R}]$

118. $\begin{cases} x^2 - 25 > 0 \\ x^2 + 3x > 0 \end{cases}$

$[x < -5 \vee x > 5]$

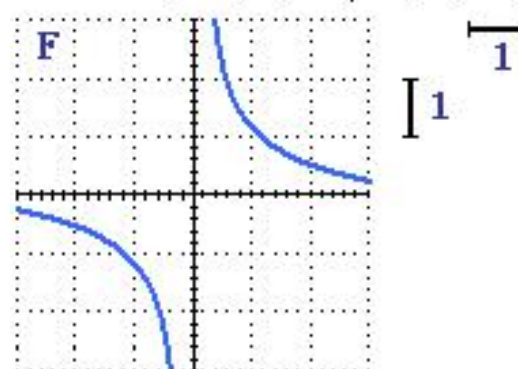
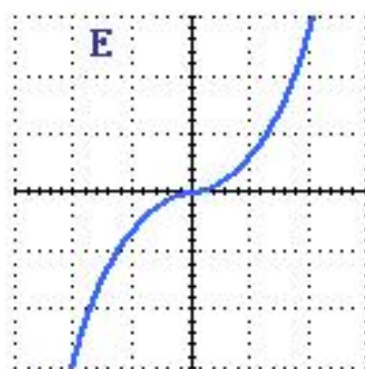
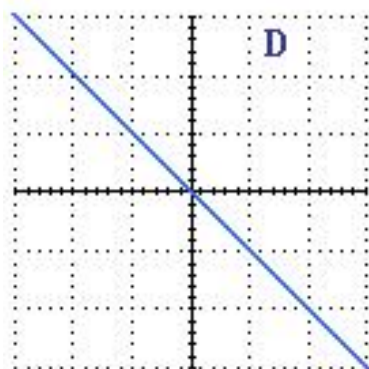
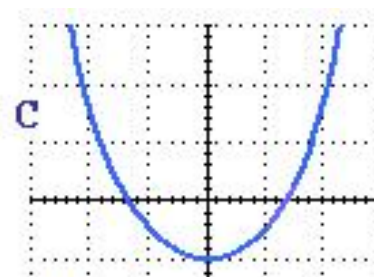
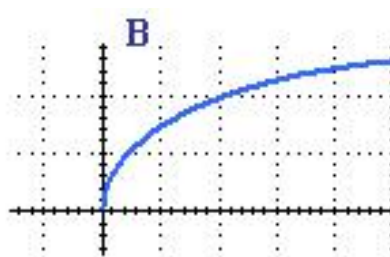
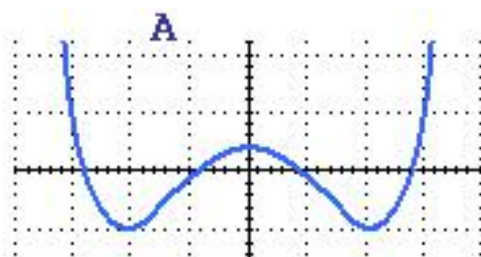
119. $\begin{cases} x^2 + 4x - 5 > 0 \\ x^2 - 2x - 3 < 0 \end{cases}$

$[1 < x < 3]$

120. $\begin{cases} x^2 + 6x + 9 > 0 \\ x^2 + x + 3 < 0 \end{cases}$

$[\exists x \in \mathbb{R}]$

ESERCIZIO 4 – LEGGERE LE CARATTERISTICHE DEI SEGUENTI GRAFICI (DOMINIO, CODOMINIO, INTERSEZIONE ASSI, SEGNO)



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ESERCIZIO 5 - RISOLVERE LE SEGUENTI EQUAZIONI DI GRADO SUPERIORE AL SECONDO:

1. $x^3 - 5x^2 + 6x = 0$

2. $32x^6 - 2x^2 = 0$

3. $x^4 + x^3 - x^2 - x = 0$

4. $x^2 - 25x^4 = 0$

5. $x^4 - 9x^2 + 8 = 0$

6. $x^8 - 5x^4 + 4 = 0$

7. $7x^3 + 13x^2 - 2x = 0$

8. $(x + 5) \cdot (x + 3) \geq (x + 9) \cdot (x + 1)$

9. $(3x + 1)^2 - 4x(x - 2) \leq 5x \cdot (x + 6) - 16x$

10. $(3x + 1) \cdot (2x - 3) < 6x \cdot (x - 1) - x$