

Algebra 3 Review Sheet

Use systems of 2 equations/2 unknowns to solve the following.

(1) Ellen and Rob went to the store to buy some presents. They had a total of \$22.80 to spend and came home with \$6.20. If Ellen spent two thirds of her money and rob spent four fifths of his money, how much did they each have to begin with?

(2) If Sue gave Sam one of her dollars, then Sam would have half as many dollars as Sue. If Sam gave Sue one of his dollars, then Sue would have five times as many dollars as Sam. How many dollars did each of them have?

Graph each of the following. Identify the vertex, AOS, plus 2 points on either side.

(3) $y = (x + 5)^2$

(4) $y = 3x^2 - 4$

(5) $y = 2x^2 + 16x + 29$

(6) $y = -2x^2 - 16x - 32$

(7) $x = (y - 2)^2 - 3$

(8) $x = -(y + 3)^2 + 4$

Solve by completing the Square

(9) $3x^2 - 11x - 4 = 0$

(10) $2x^2 - 10x + 5 = 0$

Solve by the Quadratic Formula

(11) $3x^2 - 5x + 9 = 0$

(12) $5x^2 - 2x + 4 = 0$

Solve each inequality

(13) $2x^2 - 5x - 3 \geq 0$

(14) $x^2 - 8x + 3 < 0$

(15) Find the dimensions and the maximum area of a rectangle whose perimeter is 24 inches.

(16) The difference of 2 numbers is 22. Find the numbers if their product is to be a minimum and also find this product.

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Answers:

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1. Ellen= 12.30 Rob= 10.50
2. Sue=9 Sam =3
3. Vertex=(-5,0) AOS $x=-5$
4. Vertex (0,-4) AOS $x=0$
5. Vertex (-4,-3) AOS $x=-4$
6. Vertex (-4,0) AOS $x=-4$
7. Vertex (-3,2) AOS $y=2$
8. Vertex (4,-3) AOS $y=-3$
9. 4, $-1/3$
10. $\frac{5 \pm \sqrt{15}}{2}$
11. $\frac{5 \pm i\sqrt{83}}{6}$
12. $\frac{1 \pm i\sqrt{19}}{5}$
13. $x \leq -1/2$ or $x \geq 3$
14. $4 - \sqrt{13} < x < 4 + \sqrt{13}$
15. 6x6 with an area of 36 in squared
16. 11 and -11 with a min product of -121