

Session 4.4

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Problem 1

1. Find the equation of the line that goes through the points $(-4, 11)$ and $(2, 8)$
2. Find the equation of a line that is perpendicular to ANS and goes through the origin.
3. Solve for y in:
$$\begin{cases} 3x - y = 4 \\ ANS \end{cases}$$

Problem 2

1. Solve for y in:
$$\begin{cases} 5x - 2y = 8 \\ y = 2x - 1 \end{cases}$$
2. Find the two solutions for x of $y = |x - ANS|$ when $y = 5$
3. Solve for x in:
$$\begin{cases} 5x - 2y = ANS_1 \\ y = -3x + ANS_2 \end{cases}$$

Problem 3

1. Solve for both values of x in $y = |x - 2| + 1$ when $y = 5$ and write them from smallest to largest.
2. Solve for x in:
$$\begin{cases} -x - 1 * ANS_1 * y = 2 \\ -2x + ANS_2 * y = 3 \end{cases}$$
3. Write the equation of any quadratic function that passes through the point ANS

Problem 4

1. Solve for x in $\begin{cases} 3x - 5y = 23 \\ 5x + 7y = 0 \end{cases}$
2. Find the y -intercept of a line with slope ANS that goes through the point $(-6, -18)$
3. Solve for both solutions of x for $y = |x - ANS| + 1$ where $y = 10$

Problem 5

1. Solve for y in $\begin{cases} 2x + y = 9 \\ 3x - y = 16 \end{cases}$
2. List many points on the graph $y = ANS * x^2$
3. Write down the formula for the graph passing through the points listed in ANS

Problem 6

1. Find both solutions to x for $y = -2 * |3x + 1|$ where $y = -14$ and write them in increasing order
2. Factor $x^2 + ANS_1 * x - ANS_2 * 15$
3. Plot the graph of ANS and label a couple key points to convince me it's right.

Problem 7

1. Describe in english words (no equations! otherwise you're disqualified) the graph of $y = (x - 2)^2 - 9$
2. From the description in ANS write the equation and expand it into the form $x^2 + Bx + C$
3. Factor ANS into the form $(x + u)(x + v)$ and, where $u < v$ let your final answer be $2 * u + 3 * v$

Problem 8

1. Factor $x^2 - 3x - 28$ into $(x + u)(x + v)$, and return $u + v$ as your answer
2. Find both solutions of x in $y = -|x + ANS| + 1$ where $y = -7$ and write your answers in increasing order
3. Write the quadratic function that describes $y = x^2$ with a horizontal shift of ANS_1 and a vertical shift of ANS_2