

Tuesday: odds

Thursday: Evens

Math 8

Name

Key

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Introduction to Systems of Equations

Date _____ Period _____

Determine if the ordered pair is a solution to the system of equations.

1) $2x + 2y = 10 \rightarrow 2(3) + 2(2) = 10$
 $y = -4x + 14$
 $2 = -4(3) + 14$
 $2 = -12 + 14$
 $2 = 2$
 $6 + 4 = 10$
 $10 = 10$
 True

yes, this is a solution True

2) $y = x + 4$
 $3x + 2y = -22$
 $y = x + 4$
 $10 = 6 + 4$
 $10 = 10$ True
 $3x + 2y = -22$
 $3(6) + 2(10) = -22$
 $18 + 20 = -22$
 $38 = -22$ False
 no, (6, 10) is not a solution.

3) $x - 3y = -24$
 $2x + 2y = 16$
 $2(8) + 2(0) = 16$
 $16 + 0 = 16$
 $16 = 16$ True
 $(8) - 3(0) = -24$
 $8 - 0 = -24$
 $8 = -24$ not true

No, not a solution because it doesn't work in both equations.

4) $5x + y = 24$
 $4x - 2y = 22$
 $5(5) + (-1) = 24$
 $25 - 1 = 24$
 $24 = 24$ True
 $4(5) - 2(-1) = 22$
 $20 + 2 = 22$
 $22 = 22$ True
 yes, (5, -1) is a solution.

Compare the slopes and y-intercepts of the equations to determine how many solutions each system will have. You may need to arrange one or both of the equations first.

5) $y = 4x + 20 \rightarrow m = 4, b = 20$
 $y = -3x - 22 \rightarrow m = -3, b = -22$

different slopes (m)
different y-int (b)
one solution

6) $-12x - 2y = -8$
 $y = -6x + 3$
 $-12x - 2y = -8$
 $+12x$
 $-2y = 12x - 8$
 $\frac{-2y}{-2} = \frac{12x - 8}{-2}$
 $y = -6x + 4$
 $m = -6$
 $b = 4$
 same slope diff y-int
 No solution

7) $y = mx + b$
 $y = 2x + 17 \rightarrow m = 2, b = 17$
 $-2x - 6y = -4$
 $+2x$
 $-6y = -4$
 $\frac{-6y}{-6} = \frac{-4}{-6}$
 $y = \frac{2}{3}x - \frac{2}{3}$
 $m = -\frac{2}{3}, b = \frac{2}{3}$
 different slopes (m)
 different y-int (b)
 one solution

8) $-x + 4y = -19$
 $x - 4y = 19$
 $-x + 4y = -19$
 $+x$
 $4y = 19$
 $\frac{4y}{4} = \frac{19}{4}$
 $y = \frac{19}{4}$
 same m
 same b
 Inf. many solutions
 $x - 4y = 19$
 $-x$
 $-4y = 19$
 $\frac{-4y}{-4} = \frac{19}{-4}$
 $y = -\frac{19}{4}$
 $m = -\frac{19}{4}$
 $b = -\frac{19}{4}$