

Test 1 Math 120

September 28, 2017

For the following, circle True or False (2pts each)

Problem 1. The point $(5,0)$ is in quadrant 4.

- a) True b) False

Problem 2. To write an equation of the line a slope is needed.

- a) True b) False

Problem 3. Parallel lines have slopes that are the same.

- a) True b) False

For the following problems circle the correct answer. Round any decimals to the nearest tenth place. (3pts each)

Problem 4. Which of the following is a solution to $7x - 8x - 2 = 0$

- a) $(5,-8)$ b) $(3,3)$ c) $(6,5)$ d) $(0,4)$

Problem 5. Which of the following is a solution to $x^3 + 5y - 2y = -12$

- a) $(2,-1)$ b) $(0,-4)$ c) $(-1,-4)$ d) $(3,4)$

Problem 6. Given points $(2,15)$ and $(1,3)$ what is the slope of the line that passes through the two points.

- a) 2 b) $\frac{1}{7}$ c) 12 d) 6

Problem 7. Given points $(9,5)$ and $(7,5)$ what is the slope of the line that passes through the points.

- a) 0 b) undefined c) $\frac{7}{5}$ d) 5

Problem 8. Given slope $m = 7$ and y -intercept 5 what is the equation of the line

- a) $y = 7x + 5$ b) $y = 5x + 7$ c) $y = 5x - 7$ d) $y = -5x + 7$

Problem 9. Given a vertical line with x -intercept -5 what is the equation of the line

- a) $y = x - 5$ b) $x = -5$ c) $y = -x - 5$ d) $y = -5$

Problem 10. Given a slope of 5 and the point (3,4) which of the following is the equation of the line

- a) $y - 4 = 20(x - 3)$ b) $y = 5x - 12$

- c) $y - 3 = 5(x - 4)$ d) $y = 5x - 11$

Problem 11. Given the points (4,3) and (1,-6) what is the equation of the line that passes through both points

- a) $y - 7 = 4(x - 1)$ b) $y + 4 = 3(x + 3)$

- c) $y - 1 = 3(x + 6)$ d) $y + 6 = 3(x - 1)$

Problem 12. Determine if the following lines are parallel, perpendicular or neither:

$9x - 15y = 6$ and $3x + 5y = 8$

- a) parallel b) perpendicular c) neither

Problem 13. For the following convert 118°F to Celsius [use the equation $C^{\circ} = \frac{5}{9}(F^{\circ} - 32)$]

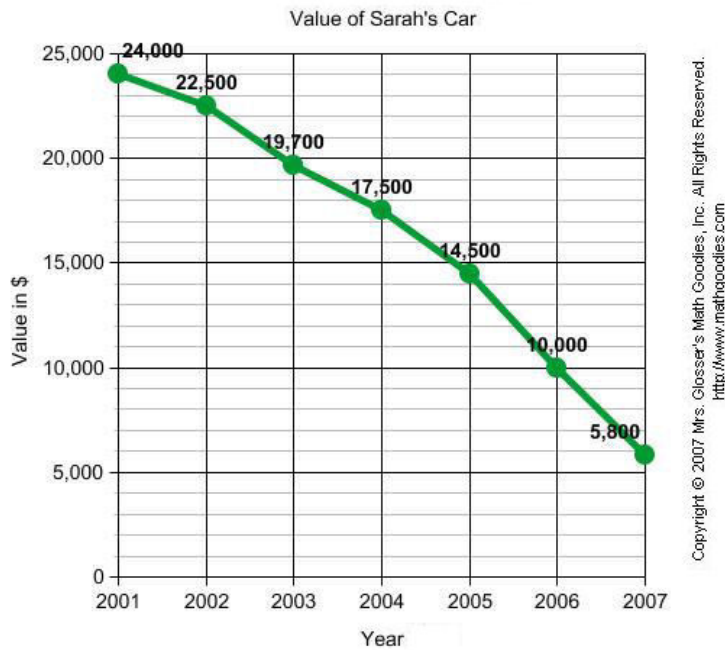
- a) 15°C b) 47.8°C c) 30°C d) none of the above

Problem 14. The number of dogs (in thousands) adopted was 15 in the year 2000 and 45 in the year 2005. Let $x = 0$ correspond to the year 2000. What is the equation that best models the adoption rates, where x is the year and y is the number of dogs that are adopted.

- a) $y = 15x - 45$ b) $y = 6x + 15$ c) $y = 15x + 21$ d) $y = 6x - 45$

Problem 15. Using the equation chosen in problem 14, approximate how many dogs will be adopted in 2017. (Use the equation you circled in problem 14, I will use that equation to grade this problem)

For the following two problems use the graph above:



Problem 16. What could the value of Sarah's car be at the start of 2008?

- a) \$14,500 b) \$ 10,000 c) \$5,000 d) \$12,000

Problem 17. What year was Sarah's car worth more than \$19,000?

- a) 2009 b) 2006 c) 2004 d) 2001

For the following problems sketch the graph of the given equations (4pts each)

Problem 18. Sketch the graph of the equation $y = 2x^2 - 1$

Problem 19. Sketch the graph of the equation $4x - 12y = 24$

Problem 20. Sketch the graph of the equation $y = 5$

Problem Extra Credit 1. Jabba the Hutt likes the temperature in his palace to be 125°T (this is a unit of temperature specific to the planet of Tatooine) His servant records the temperature to be 105°F . Use the fact that $\text{C}^\circ = \frac{5}{9}(\text{F}^\circ - 32)$ and that $\text{T}^\circ = \frac{3}{2}(\text{C}^\circ + 40)$ to determine if Jabba will eat his servant because its too cold or whether he'll let him live.

Problem Extra Credit 2. Sketch the graph of the equation $y = x^3 + 3$