

1. The sum of three times Anna's age plus her mother's age is 42. Her mother is 6 more than 6 times Anna's age. How old is Anna?

2. A store sells 5 T-shirts and 10 pairs of shorts for \$132.50. The next day they sell 3 T-shirts and 5 pairs of shorts for \$69.50. What is the cost of a T-shirt?

1. The sum of three times Anna's age plus her mother's age is 42. Her mother is 6 more than 6 times Anna's age. How old is Anna? x : Anna's age

$6x + 6$: mom

$$\begin{array}{r} 3x + 6x + 6 = 42 \\ \underline{-6 \quad -6} \\ 9x = 36 \\ x = 4 \end{array}$$

$$\begin{array}{r} 12 \\ 30 \\ \hline 42 \checkmark \\ 4 \end{array} \quad \begin{array}{l} 3x + y = 42 \\ y = 6x + 6 \\ 30 \end{array}$$

2. A store sells 5 T-shirts and 10 pairs of shorts for \$132.50. The next day they sell 3 T-shirts and 5 pairs of shorts for \$69.50. What is the cost of a T-shirt?

$$\begin{array}{l} 5x + 10y = 132.50 \\ 3x + 5y = 69.50 \end{array}$$

$$(6.5, 10) \\ \$6.50$$

Name: _____

9. Fernando bought a new car at a cost of \$28,000. The car depreciates approximately 15% of its value each year. Which function would give you the estimated value of the car, y , after t years?

- [A] $y = 28000 (.15)^t$ [B] $y = 28000 (1.15)^t$ **(C)** $y = 28000 (.85)^t$ [D] $y = 28000 (1.015)^t$

104.25%

10. Sydney plans to put her graduation money into an account and leave it there for 4 years while she goes to college. She receives \$900 in graduation money that she puts into an account earning 4.25% interest annually. How much will be in Sydney's account at the end of four years?

1.0425

- [A] \$1,052.87 **(B)** \$1,063.03 [C] \$3,711.09 [D] \$293,628.5
- $900(1.0425)^4$
1063.03

11. Maria recorded the population for two different cities in North Carolina. The results are shown in

11. Maria recorded the population for two different cities in North Carolina. The results are shown in the table below

Time (years)	City 1, NC $t = 300$	City 2, NC
2008	950	150
2010	1,248	299 EXP
2012	1,551	598
2014	1,862	1196

Which statement best describes her data?

- [A] Both cities' population changed at a constant rate.
- [B] Both cities' population changed at an exponential rate.
- (C)** City 1 increased its population at a constant rate, and City 2 increased its population at an exponential rate.
- [D] City 1 increased its population at an exponential rate, and City 2 increased its population .

12. The standard form of a quadratic equation is $y = ax^2 + bx + c$. Write the formula in terms of a .

$$a = \frac{y - bx - c}{x^2}$$

13. Solve for p: $\frac{2p-1}{1} - \frac{3p+3}{2} = \frac{2p-5}{4}$

$$\begin{array}{r} 28p - 14 - 21p + 21 = 2p - 5 \\ 7p - 35 = 2p - 5 \\ -2p + 35 = -2p + 35 \\ 5p = 30 \\ p = 6 \end{array}$$

14. What is the equation of the line that is parallel to $-4x + 3y = 5$ and passes through $(7.5, 4)$?

$$4 = \frac{4}{3}(7.5) + b$$

$$4 = 10 + b$$

$$-10 = -10 + b \quad -6 = b$$

$$y = \frac{4}{3}x - \frac{5}{4}$$

$$y = \frac{4}{3}x - 6$$

15. What is the equation of the line that is perpendicular to $10x + 5y = 8$ and passes through $(6, 17)$?

$$y = mx + b$$

$$17 = \frac{1}{2}(6) + b$$

$$17 = 3 + b$$

$$\begin{array}{r} -3 \quad -3 \\ \hline 14 = b \end{array}$$

$$\frac{5y}{5} = \frac{-10x + 8}{5}$$

$$m = \frac{1}{2}$$

$y = 17$

$$y = \frac{1}{2}x$$

$$y = \frac{1}{2}x + 14$$

Quadratic Check on Canvas

