

Review

Preview

1. Write the equation of a line (in slope intercept form $\sim y = mx + b$) given the following circumstances.

- a) passing through (1, - 1) and (3, 4)
- b) passing through (4, 6) having a slope of 7
- c) Passing through (6, - 5) parallel to $y = 2x + 3.5$
- d) Passing through (- 3, - 4) and perpendicular to $y = - 2x + 3$
- e) with a slope of $\frac{1}{4}$, and a y intercept of 3
- f) having a slope of $\frac{2}{3}$, and an x intercept of 5
- g) having an x intercept of 6 and a y intercept of - 2

a) $y = \frac{5}{2}x - \frac{7}{2}$	b) $y = 7x - 22$
c) $y = 2x - 17$	d) $y = \frac{1}{2}x - 2\frac{1}{2}$
e) $y = \frac{1}{4}x + 3$	f) $y = \frac{2}{3}x - 3\frac{1}{3}$
g) $y = \frac{1}{5}x - 2$	

2. Systems of equations – word problem format

i) Allie is 5 years younger than Buddy, and in 7 years the sum of their ages will be 47 years. How old is each now?

Allie is 14, Buddie is 19

ii) The sum of two numbers is 22. IF the smaller number is doubled and then added to the larger number, the result is 32. What are the numbers?

10 and 12

iii) Sixty apples and 35 pears cost \$ 64.00. Thirty apples and 50 pears cost \$ 58.00. Find the cost of each apple and each pear.

apples \$.60 and pears \$.80

iv) A board 43 feet long is cut into two parts so that one part is 9 feet longer than the other. Find the length of each part

17 ft by 26 ft

v) In a coat pocket Tanya found 19 coins (dimes and nickels). The value of the coins came to \$ 1.55. How many of each coin did she find?

12 dimes and 7 nickels

3. Equation notation for solving cost patterns.

The Barko Publishing Company specializes in printing student yearbooks. An order of 400 books cost \$ 3000, while an order of 600 books costs \$ 4000.

- What is the unit price (price per book)?
- What is the initial start up cost (fixed cost)
- Write an equation to represent the cost structure.
- How much would 200 books cost?
- If an order costs \$3500, how many books were ordered?

$\$ 5/book$
 $\$ 1000.00$
 $y = 5x + 1000$
 $\$ 2000$
 $500 books$

4. Find the roots of the following quadratic equations (2nd degree functions)

$x^2 - 5x - 14 = 0$	$x^2 + 3x = 10$	$x^2 - 9 = 0$	$- 5x + 4x^2 - 6 = 0$
$(x = - 2, 7)$	$(x = - 5, 2)$	$(x = \pm 3)$	$(x = - \frac{3}{4}, 2)$
$x^2 - 8x + 16 = 0$	$25x^2 - 100 = 0$	$2x^2 + x - 6 = 0$	$- 5 + 7x = 2x^2$
$(x = 4)$	$(x = \pm 5)$	$(x = - 2, \frac{3}{2})$	$(x = 1, 2\frac{1}{2})$

5. Find the roots of the following quadratic and find the coordinates of the deepest point)

$$x^2 - 10x - 24 = 0$$

roots

midpoint

min pt (deepest point)

6. exponential functions.

$$3^x = 27; \quad x = \boxed{3}$$

$$5^x = 25; \quad x = \boxed{2}$$

$$2^x = 8; \quad x = \boxed{3}$$

$$21^x + 5 = 9316 \quad \boxed{3}$$

$$3^x - 2 = 7; \quad x = \boxed{2}$$

$$5^x - 4 = 121 \quad \boxed{3}$$

$$3^x + 20 = 101 \quad \boxed{4}$$

$$5 + 2^x = 37 \quad \boxed{5}$$

7. A type of yeast cell doubles every 20 minutes. If there are 350 yeast cells in a batch of bread dough, how many will there be in 1 hour?

8. The area of an enclosed play area is 54 m^2 . If the length is 3 metres more than the width, what are the dimensions of the building.