

## Algebra 1 - Review Problems for the CH 6 Quiz

Find all solutions to the system of equations:

$$Y = x^2 + 3$$

$$Y = 4x$$

Is  $(0, 3)$  a solution to either equation? To the system of equations?

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The charges for work on a car by two auto-shops are described in the table

Hours of work	Shop 1	Shop 2
0	20	40
1	30	45
2	40	50
3	50	55
4	60	60
5	70	65
6	80	70

What is the fee for each shop?

What is the hour charge for each shop?

When do the shops charge the same amount? (this is the solution to the system)

When should you use each shop?

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Two roofers give an estimate for you house and they use the following equations:

$$Y_1 = 30x + 25$$

$$Y_2 = 20x + 100$$

What is the fee for each roofer?

What is the hour charge for each roofer?

When do the shops charge the same amount? (this is the solution to the system)

When should you use each shop?

Sears Auto sells tires and wipers. A customer purchases tires and wipers. The equations below describe the situation where  $w$  = number of wipers purchased and  $t$  = number of tires purchased:

$$w + t = 6$$

$$5w + 80t = 330$$

How many total tires and wipers were purchased?

What is the cost per wiper?

What is the cost per tire?

How many wipers and tires were purchased?

Solve the equation  $5x + 80t = 330$  for  $t$  in terms of  $w$

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Write 3 ordered pairs that represent a function.

Write 3 ordered pairs that do NOT represent a function.

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Jack tracks his savings using  $s(m) = 820 + 40m$  where  $s(m)$  is the total savings dollars and  $m$  is the months after the new year.

What is the value of the account at the new year?

What amount does he invest each month?

Find  $s(4)$  and describe the meaning in context.

When will the savings exceed \$1000?

**Algebra 1 - Review Problems for the CH 6 Quiz**

Find all solutions to the system of equations:

$$Y = x^2 + 3$$

$$Y = 4x$$

$$(1, 4)$$
  

$$(3, 12)$$

Is (0, 3) a solution to either equation? To the system of equations?

yes in  $x^2 + 3$

no in  $4x$

NO

The charges for work on a car by two auto-shops are described in the table

Hours of work	Shop 1	Shop 2
0	20	40
1	30	45
2	40	50
3	50	55
4	60	60
5	70	65
6	80	70

$$Y_1 = 10x + 20$$

$$Y_2 = 5x + 40$$

What is the fee for each shop?

shop 1: 20

shop 2: 40

What is the hour charge for each shop?

shop 1: 10 per hour shop 2: 5 per hour

When do the shops charge the same amount? (this is the solution to the system)

4 hrs, both charge \$60

When should you use each shop?

shop 1 for 0 to 4 hrs

shop 2 for more than 4 hrs

Two roofers give an estimate for you house and they use the following equations:

$$Y_1 = 30x + 25$$

$$Y_2 = 20x + 100$$

What is the fee for each roofer?

1: 25

2: 100

What is the hour charge for each roofer?

1: 30 per hour 2: 20 per hour

$$\begin{array}{r|l} 30x + 25 = 20x + 100 & \\ -20x & -25 \\ \hline 10x & 75 \\ 10 & 10 \end{array}$$

When do the shops charge the same amount? (this is the solution to the system)

7.5 hrs \$250

$$x = 7.5$$

When should you use each shop?

Jobs less than 7.5 hrs, use #1

Jobs more than 7.5 hrs, use #2

Sears Auto sells tires and wipers. A customer purchases tires and wipers. The equations below describe the situation where  $w$  = number of wipers purchased and  $t$  = number of tires purchased:

$$w + t = 6$$

$$5w + 80t = 330$$

How many total tires and wipers were purchased?

6

What is the cost per wiper?

\$5

What is the cost per tire?

\$80

How many wipers and tires were purchased?

4 tires 2 wipers

$$w + t = 6$$

$$5w + 80t = 330$$

$$t = 6 - w$$

$$t = (330 - 5w) / 80$$

2	4
x	y
w	t

Solve the equation  $5x + 80t = 330$  for  $t$  in terms of  $w$

$$t = (330 - 5x) / 80$$

Write 3 ordered pairs that represent a function.

(0, 0)  
(1, 2)  
(2, 3) } no repeated x

Write 3 ordered pairs that do NOT represent a function.

(0, 0) → (1, 4)  
(1, 2) ← fail repeated x

Jack tracks his savings using  $s(m) = 820 + 40m$  where  $s(m)$  is the total savings dollars and  $m$  is the months after the new year.

What is the value of the account at the new year?  $m = 0$

\$820

What amount does he invest each month?

40 per month

Find  $s(4)$  and describe the meaning in context.

$$s(4) = 820 + 40(4)$$

$$s(4) = 980$$

4 months after the new year -  
Savings = \$980

When will the savings exceed \$1000?

in month 5  
Savings = \$1020