

**DO NOW**

1) What are the roots of the equation  $x^2 + 4x - 16 = 0$ ?

(1)  $2 \pm 2\sqrt{5}$

(3)  $2 \pm 4\sqrt{5}$

$a=1$

$b=4$

$c=-16$

(2)  $-2 \pm 2\sqrt{5}$  !

(4)  $-2 \pm 4\sqrt{5}$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-(4) \pm \sqrt{(4)^2 - 4(1)(-16)}}{2(1)}$$

$$x = \frac{-4 \pm \sqrt{16 + 64}}{2}$$

~~$$x = \frac{-4 \pm 4\sqrt{5}}{2}$$~~

$$x = \frac{-2 \pm 2\sqrt{5}}{1}$$

2) The value of the x-intercept for the graph of  $4x - 5y = 40$  is

(1) 10

(3)  $-\frac{4}{5}$

(2)  $\frac{4}{5}$

(4) -8

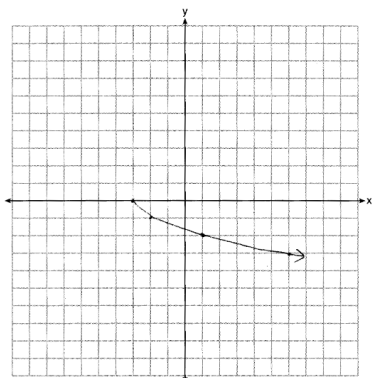
X-intercept

$y = 0$

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**Homework Answers**

25)



26) 2 units right, 3 units down

27) Exponential, not a constant rate

28) No, leading coefficient is -2

29) Irrational, cannot be written as a fraction

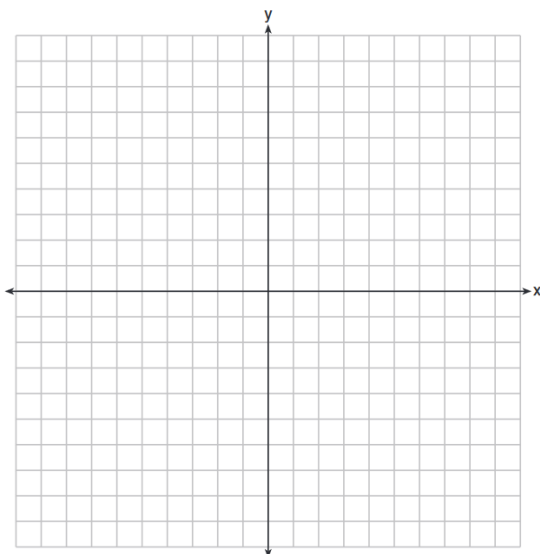
30) -3 and 1

31) -4 and 10

32)  $x = \frac{13 + 3a}{a}$

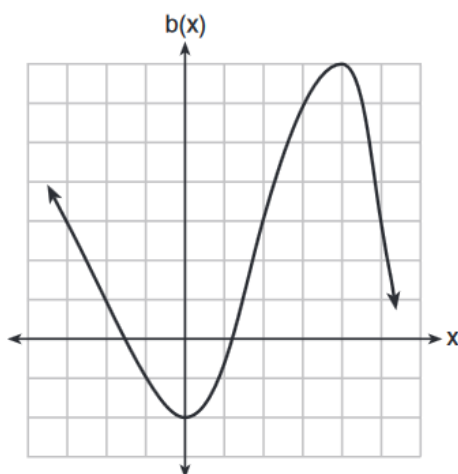
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25 Graph the function  $y = -\sqrt{x+3}$  on the set of axes below.



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26 Richard is asked to transform the graph of  $b(x)$  below.



The graph of  $b(x)$  is transformed using the equation  $h(x) = b(x - 2) - 3$ . Describe how the graph of  $b(x)$  changed to form the graph of  $h(x)$ .

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27 Consider the pattern of squares shown below:



Which type of model, linear or exponential, should be used to determine how many squares are in the  $n$ th pattern? Explain your answer.

x	y
1	2
2	4
3	8

} +2  
} +4

Exponential  
not a constant  
slope

Jun 2-9:32 AM

28 When multiplying polynomials for a math assignment, Pat found the product to be  $-4x + 8x^2 - 2x^3 + 5$ . He then had to state the leading coefficient of this polynomial. Pat wrote down  $-4$ . Do you agree with Pat's answer? Explain your reasoning.

Standard Form  
 $-2x^3 + 8x^2 - 4x + 5$   
 leading coefficient =  $-2$

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29 Is the sum of  $3\sqrt{2}$  and  $4\sqrt{2}$  rational or irrational? Explain your answer.

irrational - non-repeating non-terminating decimal

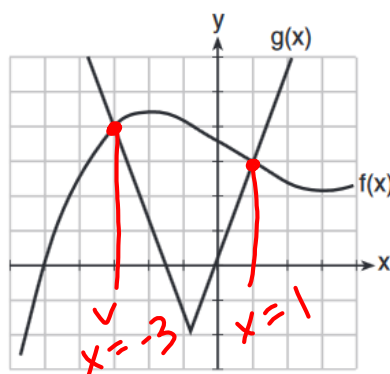
Any non-perfect square root

Rational - any # that can be written as a fraction

$$3\sqrt{2} + 4\sqrt{2} = 7\sqrt{2}$$

Jun 2-9:33 AM

30 The graph below shows two functions,  $f(x)$  and  $g(x)$ . State all the values of  $x$  for which  $f(x) = g(x)$ .



X-VALUES

$$x = 1 \text{ \& } x = -3$$

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31 Find the zeros of  $f(x) = (x - 3)^2 - 49$ , algebraically.

$$\begin{aligned}
 0 &= (x-3)^2 - 49 \\
 +49 & \qquad \qquad +49 \\
 \hline
 \sqrt{49} &= \sqrt{(x-3)^2} \\
 \pm 7 &= x-3 & \qquad \qquad x = -4, 10 \\
 \begin{array}{l} + \\ - \end{array} & \qquad \qquad \begin{array}{l} - \\ + \end{array} \\
 7 = x-3 & \qquad \qquad -7 = x-3 \\
 10 = x & \qquad \qquad -4 = x
 \end{aligned}$$

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32 Solve the equation below for  $x$  in terms of  $a$ .

$$\begin{aligned}
 & \overset{\curvearrowright}{4(ax+3)} - 3ax = 25 + 3a \\
 4ax + 12 - 3ax &= 25 + 3a \\
 ax + 12 &= 25 + 3a \\
 -12 \quad -12 & \\
 \hline
 ax &= 13 + 3a \\
 \frac{ax}{a} &= \frac{13 + 3a}{a} \\
 x &= \frac{13 + 3a}{a}
 \end{aligned}$$

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