17

ation

Practice

Functional Notation

Aim: You will be able to use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

absolute value

1. If $f(x) = |x^3 - 3|$ then $f(-1)$ is equivalent to

1) 0
2) 2
3) −2
4) 4

$|(-1)^3 - 3|$

$|-1-3|$

$|-4|$

4

Cut along dotted line.

2. If $f(x) = \dfrac{x}{x^2 - 16}$, what is the value of $f(-10)$?

1) $-\dfrac{5}{2}$
2) $-\dfrac{5}{42}$
3) $\dfrac{5}{58}$
4) $\dfrac{5}{18}$

$\dfrac{-10}{(-10)^2-16} = \dfrac{-10}{100-16}$

$= \dfrac{-10}{84} = \dfrac{-5}{42}$

Name: Key

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Algebra 1- Glue on page ~~16~~ 17

3. The graph of $y = f(x)$ is shown below.

Which point could be used to find $f(2)$?

1) A

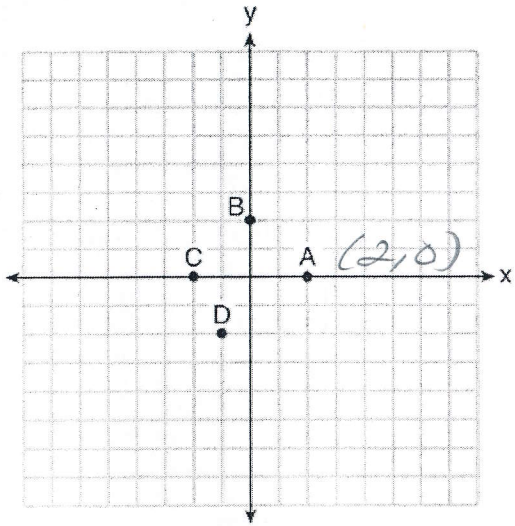
2) B

3) C

4) D

$f(2) = 0$

where $x = 2$



4. If $f(x) = kx^2$, and $f(2) = 12$, then k equals

x output

1) 1

2) 2

3) 3

4) 4

$12 = k(2)^2$

$\frac{12}{4} = \frac{k(4)}{4}$

$3 = k$

5. The height, $f(x)$, of a bouncing ball after x bounces is represented by $f(x) = 80(0.5)^x$. How many times higher is the first bounce than the fourth bounce?

1) 8

2) 2

3) 16

4) 4

$f(1) = 80(0.5)^1 = 40$

$f(4) = 80(0.5)^4 = 5$

$\frac{40}{5} = 8$

HOMEWORK Your turn.....try it for homework. Use pages ~~17~~ 18 & ~~18~~ 19.

1. If $f(x) = \dfrac{\sqrt{2x+3}}{6x-5}$, then $f\left(\dfrac{1}{2}\right) =$

1) 1

2) -2

3) -1

4) $-\dfrac{13}{3}$

2. If $f(x) = 2x^2 - 3x + 4$, then $f(x + 3)$ is equal to

1) $2x^2 - 3x + 7$ $= 2(x+3)^2 - 3(x+3) + 4$

2) $2x^2 - 3x + 13$ $= 2(x^2 + 6x + 9) - 3x - 9 + 4$

3) $2x^2 + 9x + 13$ $= 2x^2 + 12x + 18 - 3x - 5$

4) $2x^2 + 9x + 25$ $= 2x^2 + 9x + 13$

3. If $f(x) = -2x^2 + 6$, find the value of $f(-3)$.

4. If $f(x) = 3 - x^2$, find $f(-2)$.

5. If $f(x) = x^2 - 2x + 3$, find the value of $f(-2)$.

6. If $f(x) = \sqrt{25 - x^2}$, find $f(3)$.

7. If $f(x) = 3x - 4$ and $g(x) = x^2$, find the value of $f(3) - g(2)$.

8. A population of wolves in a county is represented by the equation $P(t) = 80(0.98)^t$, where t is the number of years since 1998. Predict the number of wolves in the population in the year 2008.

9. The value in dollars, $v(x)$, of a certain car after x years is represented by equation $v(x) = 25{,}000(0.86)^x$. To the *nearest dollar*, how much more is the car worth after 2 years than after 3 years?

HW: from foldable Feb. 2 18

1.) $f(\frac{1}{2}) = \frac{\sqrt{2(\frac{1}{2})+3}}{6(\frac{1}{2})-5}$

$= \frac{\sqrt{1+3}}{3-5}$

$= \frac{\sqrt{4}}{-2}$ choice 3

$f(\frac{1}{2}) = \frac{2}{-2} = -1$

3.) $f(x) = -2x^2+6$

$f(-3) = -2(-3)^2+6$

$= -2(9)+6$

$= -18+6$

$= -12$

4.) $f(-2) = 3-x^2$

$= 3-(-2)^2$

$= 3-(4)$

$= -1$

5.) $f(-2) = x^2-2x+3$

$= (-2)^2-2(-2)+3$

$= 4+4+3$

$= 11$

6.) $f(3) = \sqrt{25-x^2}$

$= \sqrt{25-3^2}$

$= \sqrt{25-9}$

$= \sqrt{16}$

$= 4$

7.) $f(3) = 3(3)-4$

$= 9-4$

$f(3) = 5$

$g(2) = (2)^2$

$g(2) = 4$

$5-4=1$

answer: 1

8.) $P(t) = 80(0.98)^t$

$t = 10$ yrs

$= 80(0.98)^{10}$

≈ 65 wolves

9.) $v(x) = 25{,}000(0.86)^x$

$v(2) = 18490$

subtract

plug in 3

$v(3) = 15901.4$

\$2588.60

\$2589