Advanced math Worksheet

SAT Math

Name _____ Date _____

Warm-up

1. $y = (x - 6)(x - 7)$. Find the sum of the zeros.

2. The point $(-4, -8)$ is on $y = f(x)$. What's $f(-4)$?

3. $y = 229(1.06)^t$ means...
   (A) Grows 6% per step (B) Falls 6% per step (C) Grows 229 per step (D) Grows 6 per step

4. Find the y-intercept of $y = x^2 + x + 5$.

5. $f(x) = 4x^2 + 7$. Find $f(2)$.

Practice

6. $y = (x - 6)(x - 12)$. Find the minimum value.

7. $g(x) = f(x) + 6$ and $f(6) = 1$. Find $g(6)$.

8. An account starts with \$200 and earns 10% yearly. How much after 2 years, in dollars?

9. $y = (x - 4)(x - 14)$. Find the x of the vertex.

© No Limit Math. Free for personal and classroom use.

10. $f(x) = (x-5)(x+2)$ has zeros at...
    (A) -5 and 2 (B) 5 and 2 (C) 5 and -2 (D) -5 and -2

11. $P = 67(2)^{t/2}$. Find P when $t = 6$.

12. For what c does $x^2 + 14x + c = 0$ have exactly one solution?

13. A table shows $f(1) = 17$, $f(2) = 26$, $f(3) = 35$. Find $f(10)$.

Challenge

14. $x^2 - 9x + 18 = 0$. Find $\frac{1}{r} + \frac{1}{s}$ for its solutions, as a fraction.

15. $f(x) = x^2 + 6$. For which positive x is $f(x) = 87$?

16. Which grows faster in the long run?
    (A) $y = 83(1.01)^x$ (B) They're equal (C) Depends on 83 (D) $y = 801x$

17. A ball's height is $h = -5(t-5)^2 + 33$. What's the max height?

18. $f(x) = 5x - 8$. For what x does $f(x) = x$?

© No Limit Math. Free for personal and classroom use.

Advanced math Worksheet: Answer Key

SAT Math

1. 13

   The zeros are 6 and 7.

2. -8

   That's what the point means.

3. (A) Grows 6% per step

   1.06 is 100% plus 6%.

4. 5

   Set $x = 0$.

5. 23

   Square first.

6. -9

   At the middle $x = 9$: $(k)(-k)$.

7. 7

   Add 6.

8. 242

   $200(1.1)^2$.

9. 9

   Halfway between the zeros.

10. (C) 5 and -2

    Set each factor to 0.

11. 536

    $t/2 = 3$.

12. 49

    $14^2 - 4c = 0$.

13. 98

    It rises by 9 each step.

14. $\frac{9}{18}$

    $\frac{r+s}{rs}$.

15. 9

    $x^2 = 81$.

16. (A) $y = 83(1.01)^x$

    Any exponential growth eventually beats any linear growth.

17. 33

    Read the vertex.

18. 2

    $5x - 8 = x$.

Stuck on something? Book a free 20-minute consultation at nolimitmath.com/book.