6. $\log_2(x^2+5x+7)=0$ — 1 / 1 point

Solve for x

- ○ $x=2$ or $x=3$
- ○ $x=2$
- ◉ $x=-2$ or $x=-3$
- ○ $x=3$

✓ Correct

We use the property that $b^{\log_b a}=a$

Use both sides as exponent for 2.

$2^{\log_2 x^2+5x+7}=2^0$

$x^2+5x+7=1$

$x^2+5x+6=0$

$(x+3)(x+2)=0$

$x=-3$ OR

$x=-2$

7. Simplify $\log_2 72-\log_2 9$ — 1 / 1 point

- ○ 4
- ○ $\log_2 4$
- ○ $\log_2 63$
- ◉ 3

✓ Correct

By the quotient rule, this is $\log_2\frac{72}{9}=\log_2 2^3=3$

8. Simplify $\log_3 9-\log_3 3+\log_3 5$ — 1 / 1 point

- ○ 15
- ◉ $\log_3 15$
- ○ 8
- ○ $\log_3 8$

✓ Correct

By the Quotient and Product Rules, this is $\log_3\frac{9\times 5}{3}=\log_3 15$

9. Simplify $\log_2(3^8\times 5^7)$ — 1 / 1 point

- ○ $56\times\log_2 15$
- ○ $15\times\log_2 56$
- ○ $(5\times\log_2 3)+(8\times\log_2 5)$
- ◉ $(8\times\log_2 3)+(7\times\log_2 5)$

✓ Correct

We first apply the Product Rule to convert to the sum: $\log_2(3^8)+\log_2(5^7)$. Then apply the power and root rule.

10. If $\log_{10} y=100$, what is $\log_2 y=$? — 1 / 1 point

- ○ 301.03
- ○ 20
- ○ 500
- ◉ 332.19

✓ Correct

Use the change of base formula, $\log_a b=\frac{\log_\alpha b}{\log_\alpha a}$

Where the "old" base is x and the "new" base is α.

So $\frac{100}{\log_{10}(2)}=\frac{100}{0.30103}=332.19$

11. A tree is growing taller at a continuous rate. In the past 12 years it has grown from 3 meters — 1 / 1 point