

ANSWER KEY

Quiz 7

Calculators are not allowed. Write your answers on the dashed lines.

[35] Question 1: TRUE or FALSE?

NP [5] F • $\sqrt{49} = -7$

NP [5] F • $\sqrt{x+y} = \sqrt{x} + \sqrt{y}$

NP [5] T • $\sqrt{xy} = \sqrt{x}\sqrt{y}$

NP [5] F • $\sqrt{x^2 - y^2} = x - y$

NP [5] F • $(a^m)^n = a^{m+n}$

NP [5] T • $a^m/a^n = a^{m-n}$

NP [5] T • $(ab)^m = a^m b^m$

[65] Question 2: Simplify

NP [5] • $(1+x^2)^2(x^2+1)^7 = (1+x^2)^9$

NP [5] • $\frac{3^x}{3^{1-x}} = 3^{x-(1-x)} = 3^{2x-1}$

NP [5] • $(2x^2y^3z)^2 = 4x^4y^6z^2$

$\frac{-3}{\text{mistake [10]}} \cdot \left(\frac{x^3 y^2 z}{xy^2 z^{-3}}\right)^{-3} = \left(x^2 z^4\right)^{-3} = x^{-6} z^{-12} = \frac{1}{x^6 z^{12}}$
 both ok

$\frac{-3}{\text{mistake [10]}} \cdot 2^n 8^{n+1} = 2^n (2^3)^{n+1} = 2^n 2^{3(n+1)} = 2^{4n+3}$

NP [10] $\cdot \left(\frac{a}{a^{1/2}}\right)^2 = (a^{1/2})^2 = a$

$\frac{-3}{\text{mistake [10]}} \cdot \left(\frac{x^{3/2} y^{1/2} z}{xy^{3/2} z^{-3/2}}\right)^4 = \left(x^{1/2} y^{-1} z^{5/2}\right)^4 = x^2 y^{-4} z^{10} = \frac{x^2 z^{10}}{y^4}$
 both ok

$\frac{-3}{\text{mistake [10]}} \cdot (-1 - 2x - x^2)^4 (x^2 + 2x + 1)^{-3} = [(-1)(1 + 2x + x^2)]^4 (x^2 + 2x + 1)^{-3}$
 $= (-1)^4 (1 + 2x + x^2)^4 (x^2 + 2x + 1)^{-3}$
 $= 1 \cdot (1 + 2x + x^2) = x^2 + 2x + 1$