

Test Prep answers

December-03-14 9:34 AM

$\frac{1}{30} = \%$

Math 9

Test Prep – Exponents

Name: KEJ
Blk. _____

★ Part A: Write as an exponent

✓ (a) x to the power of $y = x^y$

✓ (b) $\pi \cdot \pi \cdot \pi = \pi^3$

✓ (c) $-2 \cdot -2 \cdot -2 = (-2)^3$

✓ (d) $-\left(\frac{-3}{8}\right)\left(\frac{-3}{8}\right) = \left(\frac{-3}{8}\right)^2$

★ Part B: Evaluate

✓ (a) $(-2)^3 = (-2)(-2)(-2) = -8$

✓ (b) $-2^2 = -(2)(2) = -4$

✓ (c) $3^2 \cdot 5^2 = (9)(25) = 225$
mses diff

✓ (d) $2^3 \left(\frac{3}{4}\right)^2 = (8)\left(\frac{9}{16}\right) = \frac{72}{16} = 4.5$

✓ (e) $3^0 \cdot 2^3 = 1(8) = 8$

✓ (f) $\left(\frac{2}{3}\right)^2 \div \left(\frac{1}{2}\right)^0 = \frac{4}{9} \div 1 = \frac{4}{9}$

★ HINTS

$2^3 \cdot 2^4 = 2^{\text{add}}$

$2^3 \div 2^4 = 2^{\text{sub}}$

$(2^3)^4 = 2^{\text{mult}}$

★ Part C: Simplify *LAW TIME!*

✓ (a) $x^7 \cdot x^4 = x^{7+4} = x^{11}$

✓ (b) $(-a)^6 \div (-a)^4 = (-a)^2$

✓ (c) $(x^{-2})^3 \div (x^3)^2 = x^{-6} \div x^6 = x^{-12} = \frac{1}{x^{12}}$

✓ (d) $3a^2 \cdot 5a^3 = 15a^5$

✓ (e) $\frac{(-6a^2)(8a^3)}{(2a^2)^2} = \frac{-48a^5}{4a^4} = -12a$

✓ (f) $(5^{-3})^4 \div (5^2)^3 = 5^{-12} \div 5^6 = 5^{-18} = \frac{1}{5^{18}}$

★ Part D: Solve for n

✓ (a) $3^n = 81 \Rightarrow n=4$

✓ (b) $3(2^n) = 48 \Rightarrow n=4$

✓ (c) $10(3^n) = 810 \Rightarrow n=4$

✓ (d) $5^n = 1 \Rightarrow n=0 \rightarrow \text{Zero Exp. Rule!}$

✓ (e) $2^n = \frac{1}{32} \Rightarrow n=-5 \rightarrow \text{Flips so exp. is neg.}$

✓ (f) $3^{-5} \cdot 3^n \div 3^{-2} = 3^4$
 $3^{-5+n+2} = 3^4 \Rightarrow -5+n+2=4$
 $-3+n=4 \Rightarrow n=7$

Part E: Simplify

✓ (a) $2a^2 \cdot (3a)^2 = 2a^2 \cdot 9a^2 = 18a^4$

✓ (c) $(-2a^2)^2 \cdot (3a^4)^3 = 4a^4 \cdot 27a^{12} = 108a^{16}$

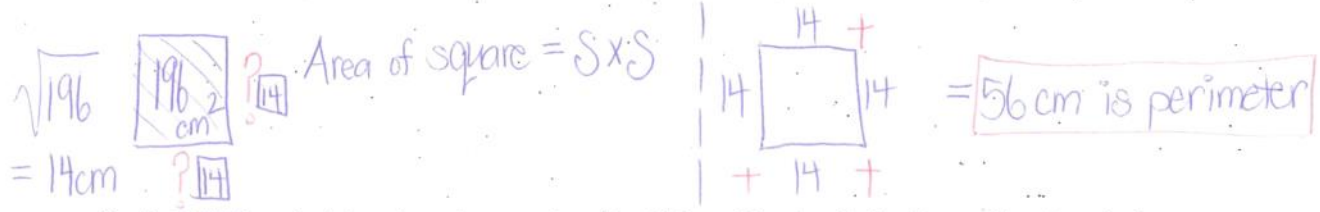
24 mks

Part E: Simplify continue.

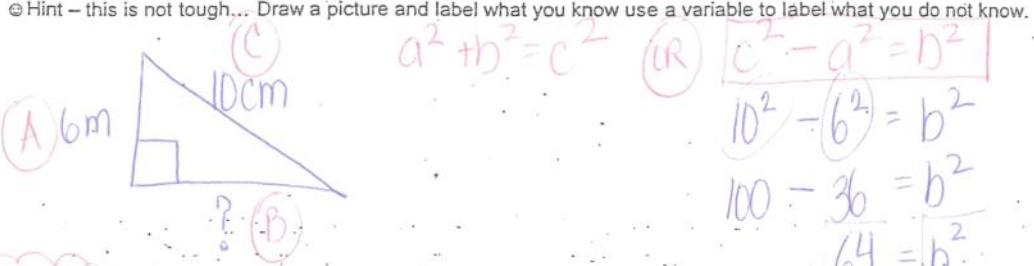
(b) $3n^0 \cdot 3n^1 \cdot 2n^3 = 18n^4$ ✓

(d) $\frac{(-2x^2)^3 (5x^3)^2}{20x^2} = \frac{(-8x^6) \cdot (25x^6)}{20x^2} = \frac{-200x^{12}}{20x^2} = -10x^{10}$ ✓

F. The area of a square is 196 cm^2 . What is the length of the perimeter?
 Hint - this is not tough... write the equation for area of a square, draw a picture and label what you know, then substitute.



G. A right triangle has a hypotenuse length of 10m. One leg is 6m long. How long is the third side?



Part H: Evaluate:

(a) $-3\sqrt{25} = -3(5) = -15$ ✓

(b) $\sqrt{100-19} = \sqrt{81} = 9$ ✓

(c) $\sqrt{5+(-12)+6} = \sqrt{-1}$ error can't do ✓

(d) $\sqrt{\frac{49}{121}} = \frac{7}{11}$ or $0.6\bar{3}$ ✓

(e) $4\sqrt{36} - 3\sqrt{25} = 4(6) - 3(5) = 24 - 15 = 9$ ✓

(f) $2\sqrt{16} - 2\sqrt{36} = 2(4) - 2(6) = 8 - 12 = -4$ ✓

(g) $2\sqrt{10^2+44} = 2\sqrt{100+44} = 2\sqrt{144} = 2(12) = 24$ ✓

(h) $\frac{6\sqrt{25}-8}{2} = \frac{6(5)-8}{2} = \frac{30-8}{2} = \frac{22}{2} = 11$ ✓

(i) $\frac{\sqrt{36}}{\sqrt{49}} = \frac{6}{7}$ ✓

(j) $\sqrt{0.81} = 0.9$ ✓

14 mks