Algebra 1 ECA Remediation

Name Answer Key

Review Homework 30.1

© 2014 Kuta Software LLC. All rights reserved.

Simplify. Your answer should contain only positive exponents.

1) $3x^2 \cdot 4x^3 \cdot x^4$

$3 \cdot 4 \cdot x^2 \cdot x^3 \cdot x^4$

$12x^9$

2) $2x \cdot 2x^{-2}$

$2 \cdot 2 \cdot x \cdot x^{-2}$

$4x^{-1} = \frac{4}{x}$

3) $3x^{-3}y^3 \cdot -3x^{-2}y^{-3} \cdot 4x^4y^2$

$3 \cdot (-3)(4)\, x^{-3} \cdot x^{-2} \cdot x^4\, y^3 y^{-3} y^2$

$-36x^{-1}y^2 = \frac{-36y^2}{x^1}$

4) $(3p)^3$

$3^3 p^3$

$= 27p^3$

5) $(k^{-3})^4$

$\frac{k^{-12}}{1} = \frac{1}{k^{12}}$

6) $(x^3y^3 \cdot x)^2$

$x^6y^6x^2$

x^8y^6

7) $\frac{3u^2v^4}{u^4v^4} = \frac{3}{1} \cdot \frac{u^2}{u^4} \cdot \frac{v^4}{v^4}$

$= 3 \cdot \frac{1}{u^2} \cdot 1 = \frac{3}{u^2}$

8) $\frac{2y}{x^0y^{-4}} = \frac{2}{1} \cdot \frac{1}{x^0} \cdot \frac{y}{y^{-4}}$

$= \frac{2}{1} \cdot 1 \cdot \frac{y^5}{1}$

$= 2y^5$

Divide.

9) $(40x^3 + 5x^2 + 2x) \div 8x^2$

$\frac{40x^3}{8x^2} + \frac{5x^2}{8x^2} + \frac{2x}{8x^2}$

$5x + \frac{5}{8} + \frac{1}{4x}$

10) $(18r^3 + 18r^2 + r) \div 6r^2$

$\frac{18r^3}{6r^2} + \frac{18r^2}{6r^2} + \frac{r}{6r^2}$

$3r + 3 + \frac{1}{6r}$

Factor the common factor out of each expression.

11) $15x^4y^2 + 18xy^5 - 12xy^6$

$3xy^2(5x^3 + 6y^3 - 4y^4)$

12) $72b^3 - 72ba + 27b$

$9b(8b^2 - 8a + 3)$

Factor each completely.

13) $n^2 - 3n - 28$

$(n+4)(n-7)$

-28	
1	28
2	14
+4	−7

14) $n^2 - 2n - 3$

$(n+1)(n-3)$

-3	
+1	−3

© 2014 Kuta Software LLC. All rights reserved. Made with Infinite Algebra 1.

15) $9n^2 - 1$

$(3n + 1)(3n - 1)$

16) $9a^2 - 4$

$(3a - 2)(3a + 2)$

17) $2a^2 - a - 15$

$2(-15)$

-30

1	30
2	15
3	10

$\boxed{+5a - 6a}$

$2a^2 + 5a - 6a - 15$

$a(2a + 5) - 3(2a + 5)$

$(a - 3)(2a + 5)$

18) $2b^2 - 7b + 6$

$2(6)$

12

1	12
2	6

$-3b \quad -4b$

$2b^2 - 3b - 4b + 6$

$b(2b - 3) - 2(2b - 3)$

$(2b - 3)(b - 2)$

Simplify.

19) $\sqrt{180}$

$2 \cdot 3 \cdot \sqrt{5}$

$= 6\sqrt{5}$

20) $\sqrt{36}$

$= 2 \cdot 3 = 6$

21) $\sqrt{48x^4y^2}$

$x \cdot x \quad x \cdot x$

$y \cdot y$

$2 \cdot 2 \cdot x \cdot x \cdot y\sqrt{3}$

$4x^2y\sqrt{3}$

22) $\sqrt{36x^3y^2}$

$x \cdot x \quad x$

$y \cdot y$

$6xy\sqrt{x}$

23) Totsakan and Ndiba are selling fruit for a school fundraiser. Customers can buy small boxes of grapefruit and large boxes of grapefruit. Totsakan sold 2 small boxes of grapefruit and 3 large boxes of grapefruit for a total of \$33. Ndiba sold 8 small boxes of grapefruit and 3 large boxes of grapefruit for a total of \$69. What is the cost each of one small box of grapefruit and one large box of grapefruit?

$-2S + -3L = -33$

$8S + 3L = 69$

$\frac{6S}{6} = \frac{36}{6}$

$S \overset{\$}{=} 6$

$2(6) + 3L = 33$

$12 + 3L = 33$

$-12 \qquad -12$

$\frac{3L}{3} = \frac{21}{3}$

$L \overset{\$}{=} 7$

	Totsakan	Ndiba
Small	2	8
large	3	3
Total	33	69

Simplify each expression.

24) $(5n^2 - 2 - 4n^3) - (n + 5 + 6n^2)$

$-4n^3 + 5n^2 \quad -2$

$-6n^2 - n - 5$

$-4n^3 - n^2 - n - 7$

25) $(x + 2x^2 + 3) - (2 + 5x^2 - 4x)$

$2x^2 + x + 3$

$-5x^2 + 4x - 2$

$-3x^2 + 5x + 1$

© 2014 Kuta Software LLC. All rights reserved. Made with Infinite Algebra 1.

Answers to Review Homework 30.1

1) $12x^9$
2) $\frac{4}{x}$
3) $-\frac{36y^2}{x}$
4) $27p^3$
5) $\frac{1}{k^{12}}$
6) x^8y^6
7) $\frac{3}{u^2}$
8) $2y^5$
9) $5x+\frac{5}{8}+\frac{1}{4x}$
10) $3r+3+\frac{1}{6r}$
11) $3xy^2(5x^3+6y^3-4y^4)$
12) $9b(8b^2-8a+3)$
13) $(n+4)(n-7)$
14) $(n+1)(n-3)$
15) $(3n+1)(3n-1)$
16) $(3a+2)(3a-2)$
17) $(2a+5)(a-3)$
18) $(2b-3)(b-2)$
19) $6\sqrt{5}$
20) 6
21) $4x^2y\sqrt{3}$
22) $6xy\sqrt{x}$
23) small box of grapefruit: \$6, large box of grapefruit: \$7
24) $-4n^3-n^2-n-7$
25) $-3x^2+5x+1$

© 2014 Kuta Software LLC. All rights reserved. Made with Infinite Algebra 1.