

**Discovering Mathematics Core Edition 8A**  
**Teaching Notes and Solutions**

Page				07/21/2014 Added (mm/dd/yyyy)
13	Class Activity 1	1(a)		(a) needs to be indented
15	Class Activity 5	2(a)	Answer	1,000 (remove \$)
17	Class Activity 7	1(a)	Answer	Last column: 0.666666667
19	Try It 1.1	3(b)	Solution	Second line: $= \frac{c^{48}}{c^{30}}$ Last line: the = sign is in the wrong font.
20	Try It 1.3	7	Question	Evaluate the following.
21	Try It 1.7	10	Solution	$79.5 - 3.21 \times 29.52$ $= 80 - 3.2 \times 30$ (rounded to 2 sig. fig.) $= 80 - 96$ $= -16$
26	Ex. 1.3	3(c)	Solution	$\frac{1}{\sqrt[5]{a}} = a^{-\frac{1}{5}}$
		4(c)	Solution	$c^{-\frac{1}{4}} \div c^{\frac{1}{8}} = c^{-\frac{1}{4} - \frac{1}{8}}$
		4(e)	Solution	$(e^{-3}f^4)^{-\frac{1}{2}} = e^{\frac{3}{2}}f^{-2}$
27		5(a)	Solution	Third line: $= a^{\frac{8}{3}}b^{-\frac{1}{6}}$
		5(f)	Solution	$(36p^2q^4)^{\frac{1}{2}}(49p^{-\frac{1}{3}}q^4)^{\frac{1}{2}} = (6pq^2)(7^{-1}p^{\frac{1}{6}}q^{-2})$ $= \frac{6}{7}p^{1+\frac{1}{6}}q^{2-2}$ $= \frac{6}{7}p^{\frac{7}{6}}$
		5(g)	Solution	Last line: $u^{\frac{1}{6}}$
		5(h)	Solution	Second line: $= 4^{\frac{1}{3}}x^{-\frac{1}{9}}y^{\frac{1}{6}} + 32^{\frac{1}{3}}x^{-\frac{2}{3}}y^{-\frac{1}{6}}$

30	Ex. 1.5	6(c)	Question	The cosmos contains approximately 50 billion galaxies.	
		8	Solution	$= (7.82 \times 10^8) \times (3.65 \times 10^2) \div (6.8 \times 10^9)$ $= \frac{7.82 \times 3.65}{6.8} \times 10^{8+2-9}$ $= 4.1975 \times 10^1$	10/23/2014
33	Ex 1.7	1	Solutions	(a) $2,000 + 6,000 = 8,000$ (b) $50,000 - 20,000 = 30,000$ (c) $80 \times 30 = 2,400$ (d) $3,000 \div 20 = 150$ (e) $100 + 4 \times 30 = 100 + 120 + 220$ (f) $10 \times 5 \times 6 = 300$ (g) $40,000 \times 0.003 = 120$ (h) $2,000 \div 30 \div 3 \approx 22$ (i) $(20 - 5) \times 7 = 15 \times 7 = 105$ (j) $6^2 \div 4 = 36 \div 4 = 9$	
35	Rev. Ex. 1	2(d)	Solution	$\left(\frac{2}{3}\right)^3 \div \left(\frac{9}{4}\right)^{-2} = \frac{2^3}{3^3} \times \left(\frac{4}{9}\right)^{-2}$	
		5(d)	Question Solution	This question is not appropriate since it involves quadratics which is covered later. Change to $a^{\frac{1}{2}} \left( a^{\frac{1}{2}} - a^{-\frac{1}{2}} \right)$ Solution is: $a^{\frac{1}{2}} \left( a^{\frac{1}{2}} - a^{-\frac{1}{2}} \right) = a^{\left(\frac{1}{2} + \frac{1}{2}\right)} - a^{\left(\frac{1}{2} - \frac{1}{2}\right)}$ $= a - 1$	
55	Ex. 2.3	1(e)	Solution	Substituting $y = 3$ into (3),	
56		1(h)	Solution	Incorrect font for fraction in the line: Substituting $y = \frac{1}{3}$ into (3),	
57		2(c)	Solution	Last two lines: $= -\frac{3}{2}$ $\therefore x = -\frac{3}{2} \text{ and } y = -\frac{1}{2}$	
67	Rev. Ex. 2	7	Solution	Last sentence: The length and width of the rectangle are 17 in. and 11 in. respectively.	
68		11(b)	Question	If the pair of equations has no unique solution, ...	07/28/2014
76	Ex. 3.1	10	Solution	By comparing coefficients, we will get,	

82	Rev. Ex. 3	4(b)	Solution	$(4y - 5)^2 - (2 + 3y)(2 - 3y)$ $(4y^2 - 2(4y)(5) + 5^2) - (2^2 - 9y^2)$ $16y^2 - 40y + 25 - (4 - 9y^2)$ $16y^2 - 40y + 25 - 4 + 9y^2$ $25y^2 - 40y + 21$	03/12/2016
82	Rev. Ex. 3	6(b)	Solution	Add a final line: $= (b + 4)^2$	
83	Rev. Ex. 3	9	Solution	$a^2 - 2ab + b^2 = (a - b)^2$ $a^2 + b^2 = (a - b)^2 + 2ab$ $= 71 + 2(4.5)$ $= 71 + 9$ $= 80$	
86	Try It 4.1	3	Solution	Consider $11x^2 + 6x + 5 = (11x + p)(x + q)$ $= 11x^2 + 11(q + p)x + pq$	
		5	Solution	$\therefore x = -\frac{7}{3}$ or $-2\frac{1}{3}$	
88	Ex. 4.1	4(c)	Solution	Third line: $x^2 + 2(3)x + 3^2$	
92	Ex. 4.2	7	Solution	$x = -\frac{14}{5}$ (rejected)	
93	Ex. 4.3	8	Solution	Are of the triangle = 105 $\left(\frac{1}{2}\right)x(2x + 1) = 105$ $x^2 + \frac{x}{2} = 105$ $2x^2 + x - 210 = 0$ $(x - 10)(2x + 21) = 0$ $\therefore x - 10 = 0$ or $2x + 21 = 0$ $x = 10$ or $x = -\frac{21}{2}$ (rejected) Thus, the height of the triangle is 10 cm.	
94		14	Solution	Missing (a) in front of first part of solution	
97	Rev. Ex. 4	9	Question	The cost for paving the border of a square flower bed is \$20 per meter.	07/28/2014
100	Try It 5.4	9	Solution	Delete period at end of first line.	
105	Ex. 5.2	3(b)	Solution	Last two lines: $= -\frac{11 + y}{a - y}$ $= \frac{11 + y}{y - a}$	
106	Ex. 5.3	1(b)	Solution	LCM of $3pq, 4rq, 6pr = 12pqr$	
		1	Solution	Second (c) should be (d).	

108		5(g)	Solution	Last line: $= \frac{4p}{3(p-2)(p+9)}$	
109	Ex. 5.4	1(a)	Solution	Second line: $3a - 1 = 8a + 24$	
113		13(b)	Solution	Thus, the possible prices per copy of the game are \$75 and \$85.	
	Ex. 5.5	2(b)	Solution	When $a = 5$ , $m = 6$ , and $T = 12$ ,	
		3(b)	Solution	Last 3 lines: $51x - 170 = 21x + 70$ $30x = 240$ $x = 8$	
116		8(f)	Solution	Second line: $\frac{3S}{2a} = \sqrt{b^2 - n^2}$	
119	Rev. Ex. 5	7	Question	Make the letter in the parentheses the subject of each of the given formulas.	07/28/2014
130	Class Activity 7	3	Answer	...and the object figure is on the same side of...	
134	Try It	9(a)	Solution	$m\angle PQR = m\angle ABC$ $= 83^\circ$	
	Try It	10	Solution	Remove period at end of first line.	
141	Ex. 6.2	4(b)	Solution	On the figure, change $P'$ to $P^1$ , $Q'$ to $Q_1$ , and $R'$ to $R_1$ .	
143		10	Solution	The points $B'$ and $C'$ need to be reversed.	
		11	Solution	Labels on y-axis should be $-2$ and $-4$ rather than $-1$ and $-2$ .	
146	Ex. 6.3	7(b)	Solution	Second line: $\frac{x}{24} = \frac{x+6}{36}$	
148		11	Solution	It is not necessary to have point $F$ in the diagram. The question asks for the lengths of the sides of $\triangle DEC$ , not $\triangle DEF$ . In (a), remove $F$ from the diagram. In (b), change the sentence to: If we mark the midpoints $D$ and $E$ of the sides $AC$ and $BC$ , then $\triangle DEC$ is similar to $\triangle ABC$ . In $\triangle DEC$ , $DE = 3$ cm, $EC = 2.5$ cm, and $CD = 2$ cm.	
149	Ex. 6.4	3(a)	Solution	Second line: $= \frac{16+12}{16}$	
		6	Solution	On the figure, change $P'$ to $P^1$ , $Q'$ to $Q_1$ , and $R'$ to $R_1$ .	
154	Rev. Ex. 6	4	Solution	Since the corresponding sides...	
156		13	Solution	The figure for (a) is for both (a) and (b) solutions.	

163	Try It	2	Solution	Last line: $\therefore y = 85$	
167	Ex. 7.1	1(c)	Solution	First line: $m\angle f = m\angle BCF$ (alt $\angle$ s, $DE \parallel CF$ )	
171	Ex. 7.2	4(b)	Solution	Delete "In $\triangle PQS$ ,"	
		4(c)	Solution	Third line: $= 34^\circ$	
173		9(a)	Solution	6. Select the two angle bisectors.	