Reading and writing mathematics solutions

Question 1

intersection, union

(a) \{3, 5, 7\}, \{1, 2, 3, 4, 5, 6, 7, 8, 9\}  
(b) \{50\}, \{21, 23, 40, 48, 49, 50, 51\}  
(c) \{-2, 1\}, \{-2, -1, 0, 1, 2, 5\}  
(d) \{\frac{1}{2}, \frac{3}{7}\}, \{\frac{1}{2}, \frac{5}{2}, \frac{3}{7}\}  
(e) \emptyset, \{-5, -3, -\frac{1}{2}, -\frac{1}{5}, \frac{1}{2}, 3, 5\}  
(f) \{\frac{3}{5}\}, \{\frac{3}{5}, \frac{4}{8}, 6, 14\}  
(g) \mathbb{N}, \mathbb{Z}  
(h) \mathbb{Q}, \mathbb{R}

Question 2

(a) 5  
(b) 8  
(c) \{1, 2, 3, 4, 5, 6, 7, 8, 9\}  
(d) \{1, 3, 5, 7\}  
(e) 9  
(f) 4

Question 3

(a) True  
(b) False \(n(A \cup B) = 9\)  
(c) Doesn’t make sense \(A \cap C\) is a set, 0 is a number  
(d) True  
(e) Doesn’t make sense \(n(A \cap C)\) is a number, \(\emptyset\) is a set  
(f) True  
(g) False \(A\) has elements 5 and 7 which aren’t in \(B\)  
(h) True
Question 4

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Question 5

(a) 4, 6  
(b) 3, 9  
(c) 10, 38  
(d) –7, 27  
(e) –10, 6  
(f) –52, 42  
(g) = 1, 2  
(h) 2, 4\(\frac{2}{3}\)

Question 6

(a) 24  
(b) 120  
(c) 720  
(d) 5040  
(e) 122  
(f) 18  
(g)* 50  
(h)* 9900

* Most of the factors cancel out!

Question 7

(a) 15  
(b)* 18  
(c) 4  
(d) 29  
(e) 225  
(f) 30  
(g)* 18  
(h)* 18  
(i)* 18  
(j) 30  
(k) 92

* Notice that these answers are all the same. In fact, these are four ways of writing out the same sum.
Question 8

(a) 5050  
(b) 20,100  
(c) 19,890

Question 9

(a) \{1, 2, 3, 4, 5\}  
(b) \{5, 6, 7, 8\}  
(c) \{4, 5, 6, 7, 8, 9\}  
(d) \{4, 5, 6, 7, 8, 9\}  
(e) \{0\}  
(f) \{-2, 2\}

(g) \{-2, -1, 0, 1, 2\}  
(h) \{1, 2\}  
(i) \{-2, 2\}  
(j) \{-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5\}  
(k) \{4, 5, 6, \ldots\}  
(l) \{\ldots, 0, 1, 2\}

Using STUDY Smarter Resources

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