Pre-Algebra Final Exam Solutions

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Pre-Algebra Final Exam Answer Key

1. (5 pts)	A	B	■	D	E
2. (5 pts)	A	B	C	■	E
3. (5 pts)	■	B	C	D	E
4. (5 pts)	A	■	C	D	E
5. (5 pts)	A	■	C	D	E
6. (5 pts)	A	B	C	D	■
7. (5 pts)	A	B	■	D	E
8. (5 pts)	A	B	C	D	■

9. (15 pts) 18 hours, 19 minutes, 14 seconds

10. (15 pts) $-\frac{17}{23}$

11. (15 pts) 34.42

12. (15 pts) $2\sqrt{2}$

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1. C. The multiplicative identity of a is $a \times 1$ because multiplying by 1 does not change the value of a.

2. D. $-2-(-5)-3=-2+5-3=3-3=0$

3. A. 3 is a factor of 6, but not a multiple of 6.

4. B. $\frac{40}{(-8)}=-5$

5. B. The LCM is the smallest number that's divisible by both numbers. 24 is the LCM of 3 and 8.

6. E. A composite number is greater than 1 and at least one factor other than itself and 1. 21 is composite because its prime factorization is $1 \times 3 \times 7$.

7. C. $54\,\% = \frac{54}{100} = \frac{27}{50}$

8. E. Multiply by the reciprocal, then simplify.

$$\frac{4}{3} \div \frac{4}{12} = \frac{4}{3} \cdot \frac{12}{4} = \frac{12}{3} = 4$$

9. Add the smallest units first, working toward the largest units.

20 seconds + 54 seconds = 74 seconds = 1 minute, 14 seconds

32 minutes + 46 minutes = 78 minutes = 1 hour, 18 minutes

9 hours + 8 hours = 17 hours

Now add the minutes and hours that were previously converted.

14 seconds

1 minute + 18 minutes = 19 minutes

1 hour + 17 hours = 18 hours

Put it altogether: 18 hours, 19 minutes, 14 seconds

10. Convert each mixed number into an improper fraction.

$$-\frac{17}{7} \div \frac{23}{7}$$

Multiply by the reciprocal of the second fraction.

$$-\frac{17}{7} \times \frac{7}{23}$$

Simplify.

$$-\frac{17}{23}$$

11. Subtract, and then round to the nearest hundredth.

$$43.162 - 8.747 = 34.415$$

Since 5 is in the thousandths place, round the digit in the hundredths place up to the next highest digit.

$$34.42$$

12. Simplify each radical as much as possible, then combine like terms.

$$3\sqrt{2} + \sqrt{8} - \sqrt{18}$$

$$3\sqrt{2} + \sqrt{4 \cdot 2} - \sqrt{9 \cdot 2}$$

$$3\sqrt{2} + 2\sqrt{2} - 3\sqrt{2}$$

$$2\sqrt{2}$$

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