

Test 1 Review

Basic Information

Where: CASA Testing Center

Time: 50 minutes

Number of questions: 14

12 Multiple Choice Questions

2 Free Response Questions

For the free response part, please show your work neatly. Do not skip steps.

Do not forget to reserve a seat for Test – 1.

Do not forget to go to CASA for fingerprint/picture process before your test date.

Remember the make-up policy: NO MAKE UPS!

Example 1: Simplify the following.

a. $\frac{1\cancel{5}}{3\cancel{5}} + \frac{2\cancel{3}}{5\cancel{5}} = \frac{5}{15} + \frac{6}{15} = \frac{5+6}{15} = \frac{11}{15}$

LCD = 15

b. $\frac{3\cancel{6}}{5\cancel{6}} + \frac{2\cancel{2}}{15\cancel{2}} + \frac{7\cancel{3}}{10\cancel{3}} = \frac{18}{30} + \frac{4}{30} + \frac{21}{30} = \frac{18+4+21}{30} = \frac{43}{30} = 1\frac{13}{30}$

LCD = 30

c. $3\frac{1}{4} - 2\frac{3}{5} = \frac{3\cdot 4+1}{4} - \frac{2\cdot 5+3}{5} = \frac{13\cdot 5}{4\cdot 5} - \frac{13\cdot 4}{5\cdot 4} = \frac{65}{20} - \frac{52}{20}$

LCD = 20

$$= \frac{65-52}{20} = \frac{13}{20}$$

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Example 2: Simply.

$$\frac{3}{5} \cdot \frac{4}{7} = \frac{3 \cdot 4}{5 \cdot 7} = \frac{12}{35}$$

$$\frac{\overset{2}{\cancel{18}}}{\underset{1}{\cancel{7}}} \cdot \frac{\overset{8}{\cancel{56}}}{\underset{9}{\cancel{81}}} = \frac{2 \cdot 8}{1 \cdot 9} = \frac{16}{9} = \frac{17}{9}$$

$$\frac{9}{4} \div \frac{3}{16} = \frac{\overset{3}{\cancel{9}}}{\underset{4}{\cancel{4}}} \cdot \frac{\overset{4}{\cancel{16}}}{\underset{3}{\cancel{3}}} = \frac{3 \cdot 4}{1 \cdot 1} = \frac{12}{1} = 12$$

$$\frac{5}{9} \div \frac{25}{1} = \frac{\overset{1}{\cancel{5}}}{9} \cdot \frac{1}{\underset{5}{\cancel{25}}} = \frac{1 \cdot 1}{9 \cdot 5} = \frac{1}{45}$$

$$\frac{\left(\frac{7}{3}\right)}{\left(\frac{49}{9}\right)} = \frac{7}{3} \div \frac{49}{9} = \frac{\overset{1}{\cancel{7}}}{\underset{3}{\cancel{3}}} \cdot \frac{\overset{3}{\cancel{9}}}{\underset{7}{\cancel{49}}} = \frac{3}{7}$$

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Example 3: Simplify

$$\sqrt{80} = \sqrt{16 \cdot 5} = \sqrt{16} \cdot \sqrt{5} = \boxed{4\sqrt{5}}$$

$$\sqrt{4 \cdot 20} = \sqrt{4} \cdot \sqrt{20} = 2\sqrt{20} = 2\sqrt{4 \cdot 5} = 2\sqrt{4} \cdot \sqrt{5} = 2 \cdot 2\sqrt{5} = 4\sqrt{5}$$

$$\sqrt{135} = \sqrt{9 \cdot 15} = \sqrt{9} \cdot \sqrt{15} = \boxed{3\sqrt{15}}$$

4
9
16
25
49
64
81
100

Example 4: Simplify. Your answer should contain no negative exponents

$$\frac{x^4 y^{14} z^5}{x^7 y^3} = x^{4-7} y^{14-3} z^5 = x^{-3} y^{11} z^5 = \boxed{\frac{y^{11} z^5}{x^3}}$$

$$x^{-n} = \frac{1}{x^n} \quad \frac{1}{x^{-n}} = x^n$$

$$(3a^{-2}b^4)^{-3} = \frac{1}{(3a^{-2}b^4)^3} = \frac{1}{3^3 a^{-6} b^{12}} = \frac{a^6}{3^3 b^{12}}$$

$$= \boxed{\frac{a^6}{27b^{12}}}$$

$$\frac{w^4 w^7 u^5}{u^{14}} = w^{4+7} u^{5-14} = w^{11} u^{-9} = \boxed{\frac{w^{11}}{u^9}}$$

$$x^n \cdot x^m = x^{n+m}$$

$$\frac{x^n}{x^m} = x^{n-m}$$

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Example 5: Evaluate.

$$5(3 - (4 - 7)^2) + 18 = 5(3 - (-3)^2) + 18 = 5(3 - 9) + 18 \\ = 5(-6) + 18 = -30 + 18 = \boxed{-12}$$

$$32 \div 16 \cdot 2 + (7 - 6^2) = 32 \div 16 \cdot 2 + (7 - 36) = 32 \div 16 \cdot 2 + (-29) \\ = 2 \cdot 2 + (-29) = 4 + (-29) = \boxed{-25}$$

Example 6: Solve for x.

~~13~~ $-\frac{3}{13}x = 9 \cdot 13$ LCD = 13

$$\frac{-3x}{-3} = \frac{117}{-3}$$

$$\boxed{x = -39}$$

$$\frac{13^2}{9} = \frac{117}{9}$$

$$3x + \frac{4}{15} = \frac{3}{10}$$