West Los Angeles College

Department of Mathematics

Department Final
For
Math 112: PreAlgebra
(and Math 110: Introduction to Algebraic Concepts)

Spring 2010

25 Multiple-Choice Questions, 1 hour 15 minutes → 75 min
Closed Book, Closed Note, No Calculator

Unit rate = $\frac{75 \text{ mins}}{25 \text{ questions}}$ = 3 mins/question

Note:

- In the real Final, you will be provided scratch papers, yet you are NOT allowed to write on the Exam paper.
- This is the WLAC Department Final for Spring 2010. While the underlying concepts are expected to be similar, Department Final for other semesters may look significantly different. For that reason, do not study based on this Review only.
- On the Final day, you need to bring your Student ID, your own scantron (long form), pencils and an eraser. Bring more than one pencils and sharpen them before the Final is started. Borrowing stationary during the Final is strongly prohibited.
- Turn off your cellphone, put it into your bag. DO NOT access your bag (and therefore your cellphone either) until you are outside the classroom.

WLAC Dept Final
Math 110/112
Spring 2010

1) $-19-(-12)$

$= -19+12$

$= -7$

$19 - 12 = 7$

(B)

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2) $-2+15+(-9)\cdot 4$

$= -2+15+(-36)$

$= 13+(-36)$

$= -23$

$36 - 13 = 23$

(B)

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3) $50 \div (-5)^2 + (-6)$

$= 50 \div 25 + (-6)$

$= 2+(-6)$

$= -4$

(C)

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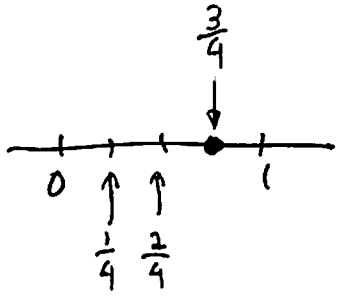
4) $\frac{3}{4}$



(C)

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5) 10, 8, 24, 40, 10, 45, 48

$\rightarrow$ 8, 10, 10, (24) 40, 45, 48

median = 24

(C)

6) $13\frac{1}{7} - 8\frac{3}{7}$

$= 12\frac{8}{7} - 8\frac{3}{7}$

$= 4\frac{5}{7}$ (C)

$13\frac{1}{7} = 12 + 1\frac{1}{7}$
$= 12\frac{8}{7}$

$13\frac{1}{7} - 8\frac{3}{7}$
$= \frac{92}{7} - \frac{59}{7}$
$= \frac{33}{7} = 4\frac{5}{7}$

$7\overline{)33}$ quotient 4, 28, 5

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7) $b^2 - 4ac$; $b = -5$, $a = 3$, $c = 6$

$\rightarrow (-5)^2 - 4 \cdot 3 \cdot 6$

$= 25 - 4 \cdot 3 \cdot 6$

$= 25 - 12 \cdot 6$

$= 25 - 72$

$= -47$

$72 - 25 = 47$ (C)

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8) Expression → sum of terms ✓
Equation → has equal sign ✗

$x^2 + 19xy - 5$ (B)

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9) $61 = 9x - 2$

$61 + 2 = 9x$

$63 = 9x$

$\frac{63}{9} = x$

$7 = x$ (C)

$61 = 9x + 2$
$+2 \quad +2$

$\frac{63}{9} = \frac{9x}{9}$

$7 = x$

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10) $4 + \boxed{x} = 15$

$4 + n = 15$

$n = 15 - 4$

$n = 11$ (D)

11) 15, 9, 4, 10, 7, 1, 5

$\text{mean} = \frac{15+9+4+10+7+1+5}{7}$

$= \frac{51}{7}$

≈ 7.3

(B)

$$\begin{array}{r} 3 \\ 15 \\ 9 \\ 4 \\ 10 \\ 7 \\ 1 \\ +\ 5 \\ \hline 51 \end{array}$$

$$\begin{array}{r} 7.28 \\ 7\overline{)51.} \\ -\ 49 \\ \hline 20 \\ -\ 14 \\ \hline 60 \\ -\ 56 \\ \hline 4 \end{array}$$

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12) $\frac{5}{3} > 1.665$

$1.666\ldots > 1.665$

(C)

$$\begin{array}{r} 1.666\ldots \\ 3\overline{)5.} \\ 3 \\ \hline 20 \\ 18 \\ \hline 20 \\ 18 \\ \hline 20 \\ 18 \\ \hline 0 \end{array}$$

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13) $5.8x - 7.8 = 10.18$

$5.8x = 10.18 + 7.8$

$5.8x = 17.98$

$x = \frac{17.98}{5.8}$

$x = \frac{179.8}{58}$

$x = 3.1$

$$\begin{array}{r} 10.18 \\ +\ 7.8 \\ \hline 17.98 \end{array}$$

$$\begin{array}{r} 3.1 \\ 58\overline{)179.8} \\ -\ 174 \\ \hline 58 \\ -\ 58 \\ \hline 0 \end{array}$$

(D)

$5.8x - 7.8 = 10.18$

$+7.8 \quad +7.8$

$\frac{5.8x}{5.8} = \frac{17.98}{5.8}$

$x = \frac{179.8}{58}$

$x = 3.1$

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14) $\frac{1}{11}$

$0.09090909\ldots = 0.\overline{09}$

$$\begin{array}{r} 0.09090909\ldots \\ 11\overline{)1.0} \\ 0 \\ \hline 100 \\ 99 \\ \hline 10 \\ 0 \\ \hline 100 \\ 99 \\ \hline 1 \end{array}$$

(D)

15) 40% of 600 students have seen Avatar

→ $40\% \cdot 600 = x$

$0.4 \cdot 600 = x$

$240.0 = x$

$240 = x$

(A)

$$\begin{array}{r} 600 \\ \times\ 0.4 \\ \hline 240.0 \end{array}$$

600×0.4

$= 60 \times 4$

$= 240$

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16) $3.52 = 100\% \cdot x$

$3.52 = 1 \cdot x$

$3.52 = x$

(C)

$$\frac{3.52}{x} = \frac{100}{100}$$

$\Rightarrow 3.52 \times 100 = 100x$

$352 = 100x$

$\frac{352}{100} = x$

$3.52 = x$

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17) $8 - 4(12 - 9)$

$= 8 - 4 \cdot 3$

$= 8 - 12$

$= -4$

(D)

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18) $\frac{x}{24} = \frac{16}{12}$

CM $\Rightarrow 12 \cdot x = 16 \cdot 24$

$12x = 384$

$x = \frac{384}{12}$

$x = 32$ // (B)

$\frac{x}{24} = \frac{24}{18}$

$\times \frac{\overset{2}{24}}{\underset{3}{18}}$

$\frac{144}{384}$

$\frac{x}{24} = \frac{24}{18}$

$\frac{x}{24} = \frac{4}{3}$

$\vdots$

$\frac{x}{24} = \frac{16}{12}$

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19) $\frac{7}{9} - \frac{1}{12}$

$= \frac{28}{36} - \frac{3}{36}$

$= \frac{25}{36}$ // (A)

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20) $\frac{1}{4} + \frac{1}{8} + \frac{5}{12}$

$= \frac{6}{24} + \frac{3}{24} + \frac{10}{24}$

$= \frac{19}{24}$ (A)

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21) Unit rate $= \frac{\$4200}{5 \text{ weeks}}$

$= \$840/\text{week}$

(D)

$$\begin{array}{r} 840 \\ 5\overline{)4200} \\ -\,40 \\ \hline 20 \\ -\,20 \\ \hline 0 \\ 0 \\ -\,0 \\ \hline 0 \end{array}$$

22) Brand A:

unit price $= \frac{\$21.90}{30\text{ oz}}$

$= \$0.73/\text{oz}$

$$\begin{array}{r} 0.73 \\ 30\overline{)21.90} \\ -\ 210 \\ \hline 90 \\ -\ 90 \\ \hline 0 \end{array}$$

Brand B:

unit price $= \frac{\$16.80}{24\text{ oz}}$

$= \$0.70/\text{oz}$

$$\begin{array}{r} 0.70 \\ 24\overline{)16.80} \\ -\ 168 \\ \hline 0 \\ -\ 0 \\ \hline 0 \end{array}$$

Brand B is the best buy

(C)

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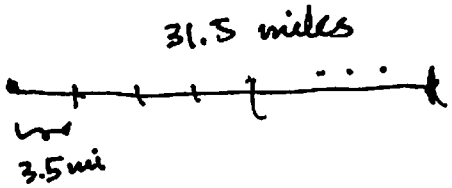
23)



Number of stops $= \frac{31.5\text{ mi}}{3.5\text{ mi}}$

$= \frac{315}{35}$

$= 9$

(C)

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24) 14.84848

$\Rightarrow 14.85$

(B)

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25) $18\frac{2}{9} + 13\frac{3}{5}$

$= 18\frac{10}{45} + 13\frac{27}{45}$

$= 31\frac{37}{45}$

(D)