Final Practice Test - DO NOT WRITE ON THIS SHEET!

Write each number in scientific notation.

1) 0.000067

A) 67×10^{-6} B) 6.7×10^{5}

C) 6.7×10^{-5} D) 67×10^{-7}

E) 6.7×10^{-6}

Simplify. Write each answer in scientific notation.

2) $\dfrac{8.17 \times 10^{7}}{6.3 \times 10^{2}}$

A) 5.147×10^{10}

B) 51.47×10^{10}

C) 1.297×10^{5}

D) 0.5147×10^{10}

E) 1.297×10^{6}

Solve.

3) $\dfrac{r-3}{5} = 3$

A) {−2} B) {18}

C) $\{-\frac{9}{7}\}$ D) $\{\frac{1}{4}\}$

E) {2}

Write the slope-intercept form of the equation of each line given the slope (m) and y-intercept (b).

4) Slope = $-\frac{8}{5}$, y-intercept = 4

A) $y = \frac{1}{5}x + 4$ B) $y = \frac{8}{5}x + 4$

C) $y = -\frac{8}{5}x + 4$ D) $y = 4x + \frac{1}{5}$

E) $y = -4x + \frac{1}{5}$

Write the slope-intercept form of the equation of each line.

5) $7x - 5y = -4$

A) $y = \frac{4}{5}x + \frac{2}{5}$

B) $y = -\frac{7}{5}x + \frac{4}{5}$

C) $y = \frac{7}{5}x + \frac{4}{5}$

D) $y = \frac{1}{5}x + \frac{4}{5}$

E) $y = \frac{2}{5}x + \frac{4}{5}$

6) $-3x = -4y + 9$

A) $y = \frac{3}{4}x + \frac{9}{4}$

B) $y = \frac{3}{4}x - 1$

C) $y = \frac{9}{4}x + \frac{3}{4}$

D) $y = x + \frac{3}{4}$

E) $y = -x + \frac{3}{4}$

Solve each system using the elimination method.

7) $3x + y = 22$
$5x - 7y = 2$

A) $(-4, 6)$
B) $(6, 4)$
C) $(4, -5)$
D) $(4, 6)$
E) $(4, 5)$

Solve each system by substitution.

8) $y = -2x - 4$
$-3x + 3y = 24$

A) $(-4, -4)$
B) $(-4, 4)$
C) $(-6, -4)$
D) $(4, -4)$
E) $(4, 6)$

Write each as a decimal. Use repeating decimals when necessary.

9) $\frac{1}{333}$

A) $0.\overline{300}$
B) $0.2\overline{030}$
C) 0.1333
D) $0.\overline{015}$
E) $0.\overline{003}$

Write each as a fraction.

10) $0.\overline{5}$

A) $\frac{4}{9}$
B) $5\frac{9}{10}$
C) $55\frac{5}{9}$
D) $\frac{5}{9}$
E) $\frac{1}{180}$

Simplify. Your answer should contain only positive exponents.

11) $2^3 \cdot (2^4)^{-3}$

A) $\frac{1}{2^{11}}$ B) 2^{21}

C) $\frac{1}{2^9}$ D) 2^{10}

E) 2^{12}

12) $\frac{(3x^{-2} \cdot 4x)^4}{3x^2}$

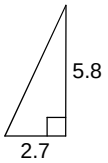
A) $\frac{1}{2x^8}$ B) $\frac{1}{12x^5}$

C) $27x^{13}$ D) $\frac{6912}{x^6}$

E) $\frac{x^4}{256}$

Find each missing length.

13)



A) 7 B) 41

C) 9.4 D) 6.4

E) 8.5

Find the distance between each pair of points.

14) $(-7, 0), (-2, 2)$

A) $\sqrt{77}$ B) $\sqrt{29}$

C) $\sqrt{85}$ D) $\sqrt{7}$

E) $\sqrt{11}$

Find the volume of each figure. Round your answers to the nearest hundredth, if necessary. Leave your answers in terms of π for answers that contain π.

15) A cylinder with a radius of 11 cm and a height of 8 cm.

A) 605π cm³ B) 1267π cm³

C) 1116π cm³ D) 968π cm³

16) A sphere with a diameter of 20 m.

A) 1333.33π m³

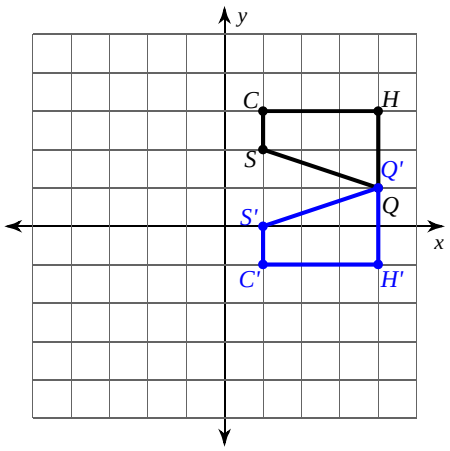
B) 1428.77π m³

C) 1383.37π m³

D) 10666.67π m³

Write the equation of the line of reflection

17)



A) reflection across $y = 1$
B) reflection across $x = 3$
C) reflection across $x = 1$
D) reflection across $y = -1$
E) reflection across $x = 2$

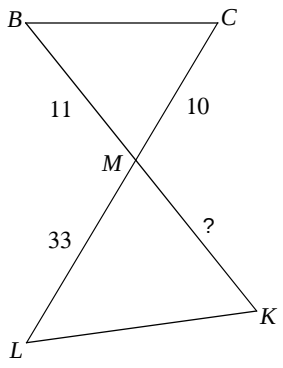
Find the coordinates of the vertices of each figure after the given transformation.

18) translation: 2 units left and 1 unit down
$H(5, 1)$

A) $H'(3, 0)$
B) $H'(4, -1)$
C) $H'(-1, -1)$
D) $H'(0, -4)$
E) $H'(5, 5)$

Find the missing length. The triangles in each pair are similar.

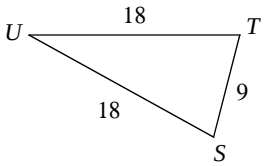
19)

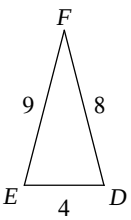


A) 30
B) 17
C) 18
D) 37

State if the triangles in each pair are similar.

20)





A) similar
B) not similar