# Practice Paper for Placement

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Evaluate.

1) $5^3 + 4^0$ 1) _____

A) 126 B) 27 C) 125 D) 15

Simplify.

2) $0 \div 9 + 7 \times 2$ 2) _____

A) 23 B) 14 C) Undefined D) 32

Evaluate using the correct order of operation.

3) $\frac{5}{8} \times \left( \frac{1}{8} + \frac{1}{4} \right) \times \frac{32}{5}$ 3) _____

A) 3 B) 1 C) $\frac{3}{4}$ D) $1\frac{1}{2}$

Solve each proportion for the given variable.

4) $\frac{2}{5} = \frac{5}{n}$ 4) _____

A) $2\frac{1}{2}$ B) $12\frac{1}{2}$ C) 10 D) 25

Write as a percent. Round to the nearest hundredth of a percent when necessary.

5) $\frac{14}{25}$ 5) _____

A) 1000% B) 5.6% C) 28% D) 56%

Perform the conversion.

6) 0.89 g = _____ mg 6) _____

A) 890 B) 0.00089 C) 89 D) 0.089

Combine like terms.

7) -8b + 4a - 4c - 3b + 5a 7) _____

A) -11a + 9b - 4c B) 9a - 11b C) 9a - 11b - 4c D) -1a - 11b - 4c

Solve.

8) -5x + 2(3x - 3) = 2 - 7x 8) _____

A) $-\frac{1}{2}$ B) 1 C) - 1 D) $\frac{2}{3}$

Simplify.

9) $\frac{27 - 2 \cdot 3}{3^3 \div 3^2 - (-3)^2}$ 9) _____

A) $\frac{7}{4}$ B) $-\frac{7}{2}$ C) $-\frac{1}{3}$ D) $\frac{2}{3}$

Evaluate.

10) $\frac{6x - 5x^2}{x^2 - 10}$, for $x = 3$ 10) _____

A) - 117 B) 12 C) 27 D) - 27

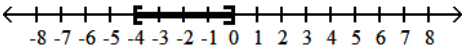
Choose the most appropriate translation of the question.

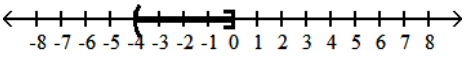
11) 57 is 94% of what number? 11) _____

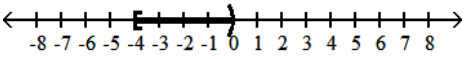
A) $p = 0.94 \cdot 57$ B) $57 = 0.94p$ C) $p = 0.57p$ D) $p \cdot 57 = 94$

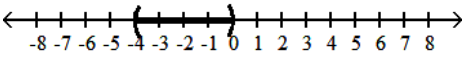
Graph on a number line.

12) $-4 \le x \le 0$ 12) _____

A) 


B) 


C) 


D) 


Translate the sentence to an algebraic inequality.

13) A number is less than or equal to -6. 13) _____

A) $x > -6$ B) $x < -6$ C) $x \ge -6$ D) $x \le -6$

Find the intercepts for the equation.

14) $4x + y = -8$ 14) _____

A) (-4, 0), (8, 0) B) (-2, 0), (0, -8) C) (0, -4), (0, 8) D) (-8, 8), (-4, -8)

Find the product.

15) $4x^5(-5x^3 + 3)$ 15) _____

A) $-8x^5$ B) $-20x^3 + 12$ C) $-20x^8 + 12x^5$ D) $-20x^8 + 3$

Divide the polynomial by the monomial.

16) $\frac{-9x^9 + 18x^6}{-3x^3}$ 16) _____

A) $3x^6 + 18x^6$ B) $-3x^{12}$ C) $3x^6 - 6x^3$ D) $-9x^9 - 6x^3$

Factor completely.

17) $x^2 - x - 12$ 17) _____

A) (x + 4)(x - 3) B) (x + 3)(x - 4) C) prime D) (x + 1)(x - 12)

Rationalize the denominator. Simplify, if possible.

18) $\frac{6}{\sqrt{7} + \sqrt{13}}$ 18) _____

A) $\sqrt{13} + \sqrt{7}$ B) $\sqrt{6}$ C) $\sqrt{7} - \sqrt{13}$ D) $\sqrt{13} - \sqrt{7}$

Solve the equation using the quadratic formula. Simplify irrational solutions, if possible.

19) $x^2 + 8x - 5 = 0$ 19) _____

A) $\{4 \pm \sqrt{21}\}$ B) $\{-4 \pm \sqrt{21}\}$ C) $\{-1 \pm \sqrt{21}\}$ D) $\{-4 \pm 2\sqrt{21}\}$

Solve the equation.

20) $\sqrt{x + 3} - 6 = 0$ 20) _____

A) {3} B) $\varnothing$ C) {33} D) {39}

State whether the function is linear or quadratic.

21) $f(x) = 4x - 9$ 21) _____

A) Linear B) Quadratic

Find the requested function value of $\theta$.

22) If $\sin \theta = \frac{3}{16}$, find $\cos \theta$. 22) _____

A) $\frac{\sqrt{247}}{3}$ B) $\frac{16}{247}$ C) $\frac{3}{247}$ D) $\frac{\sqrt{247}}{16}$

Convert to radian measure. Leave your answer in terms of $\pi$.

23) $-45°$ 23) _____

A) $-\frac{\pi}{4}$ B) $-\frac{\pi}{6}$ C) $-\frac{\pi}{5}$ D) $-\frac{\pi}{3}$

Convert to degree measure. Round to two decimal places, if necessary.

24) $\frac{\pi}{4}$ 24) _____

A) 0.785° B) $\left(\frac{\pi}{4}\right)^\circ$ C) 45° D) $45\pi°$

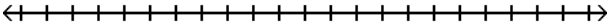
Solve.

25) A bicycle wheel rotates 53 times in 1 minute. Through how many degrees does a point on the tip of the wheel move in 13 seconds? 25) _____

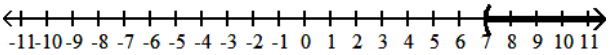
A) 318° B) 78° C) 689° D) 4134°

Use both the addition and multiplication properties of inequality to solve the inequality. Graph the solution set on a number line.

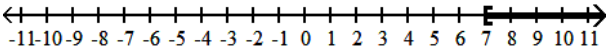
26) $2x + 9 < 23$ 26) _____



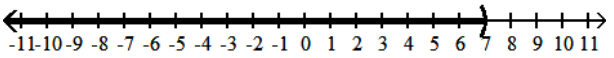
A) $(7, \infty)$



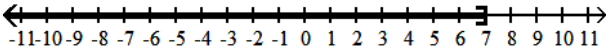

B) $[7, \infty)$




C) $(-\infty, 7)$




D) $(-\infty, 7]$




Solve the equation.

27) $5(x + 2) + 13 = 2(x + 5) + 10$ 27) _____

A) {11} B) {9} C) {-1} D) {13}

For those which are polynomial functions, find the degree, the leading term, and the leading coefficient.

28) $f(x) = 2 + 4x - 8x^4$ 28) _____

A) Degree: 4, leading term: -8, leading coefficient: 2

B) not a polynomial function

C) Degree: 0, leading term: 2, leading coefficient: 2

D) Degree: 4, leading term: $-8x^4$, leading coefficient: -8

Factor by grouping.

29) $8x^6 - 20x^3 + 6x^3 - 15$ 29) _____

A) $(8x^3 - 3)(x^3 + 5)$ B) $(4x^3 + 3)(2x^3 - 5)$

C) $(4x^3 - 3)(2x^3 + 5)$ D) $(4x^6 + 3)(2x - 5)$

Combine the following, if possible.

30) $-5\sqrt{48} + 6\sqrt{27}$ 30) _____

A) $-38\sqrt{3}$ B) $2\sqrt{3}$ C) $38\sqrt{3}$ D) $-2\sqrt{3}$

Factor.

31) $81x^2 - 25$ 31) _____

A) $(9x + 5)(9x - 5)$ B) $(9x + 5)^2$ C) $81x^2 - 25$ D) $(9x - 5)^2$

Find the slope of the line containing the given points.

32) (-14, -13) and (-1, 13) 32) _____

A) $\frac{1}{2}$ B) - 2 C) 2 D) 0

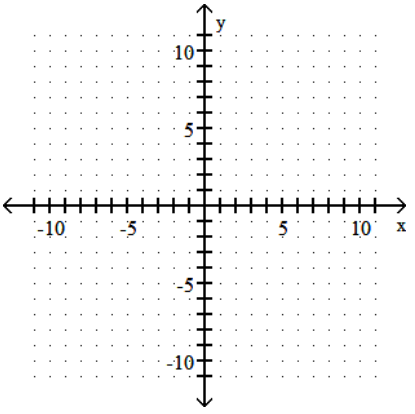
Find the slope and the y-intercept of the equation.

33) $f(x) = -\frac{3}{5}x + 3$ 33) _____

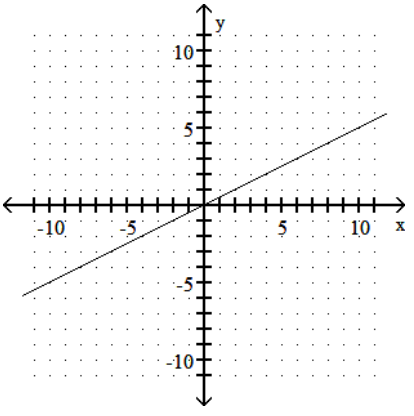
A) $-\frac{5}{3}; (0, -3)$ B) $-\frac{3}{5}; (0, 3)$ C) $\frac{3}{5}; (0, -3)$ D) $3; \left(0, -\frac{3}{5}\right)$

Graph the equation using the slope and the y-intercept.

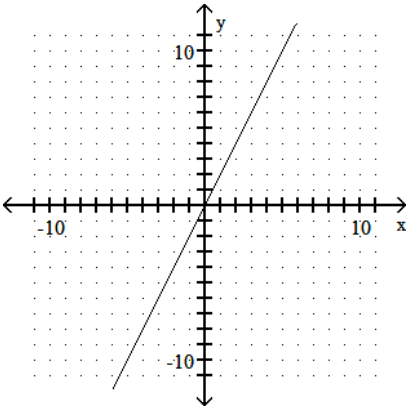
34) $2x - y = 0$ 34) _____



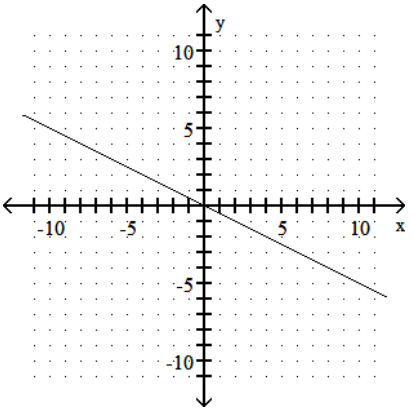

A)




B)




C)

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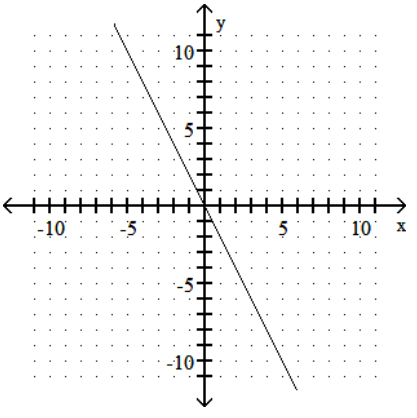


Write a slope-intercept equation for a line with the given characteristics.

35) $m = \frac{1}{2}$; passes through (0, 4) 35) _____

A) $y = \frac{1}{2}x - 4$ B) $y = \frac{1}{2}x + 4$ C) $y = 4x + \frac{1}{2}$ D) $y = 4x - \frac{1}{2}$

Determine whether the pair of lines is parallel, perpendicular, or neither.

36) $y = -\frac{19}{4}x + 1$ 36) _____

$y = \frac{4}{19}x + 1$

A) Parallel B) Perpendicular C) Neither

Perform the indicated multiplication.

37) (-4)(3)(-1)(-3)(-3) 37) _____

A) 108 B) 36 C) -108 D) -7

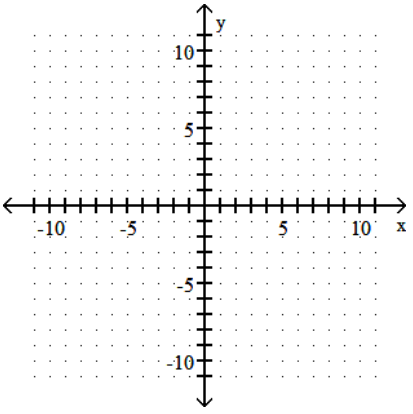
Write an equation in slope-intercept form of the line satisfying the given conditions.

38) Parallel to the line y = -3x; containing the point (3, 6) 38) _____

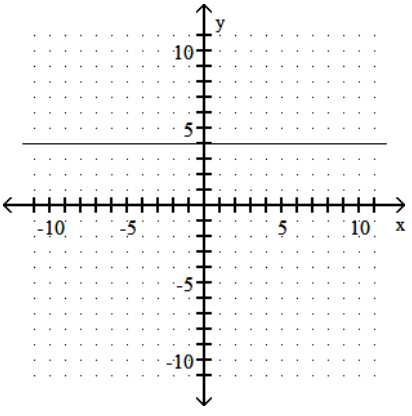
A) y = -3x B) y - 6 = -3x - 3 C) y = -3x - 15 D) y = -3x + 15

Graph the equation.

39) $y + 4 = 0$ 39) _____




A)

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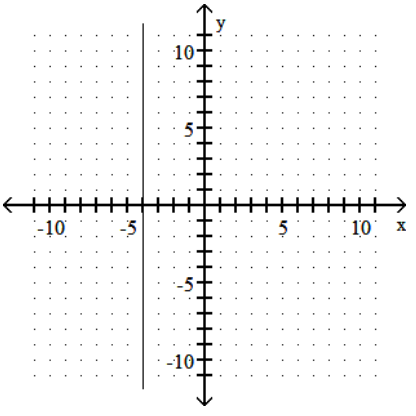
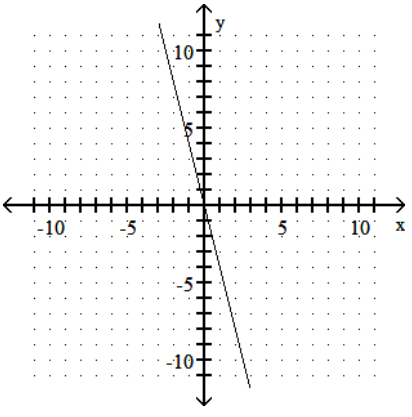
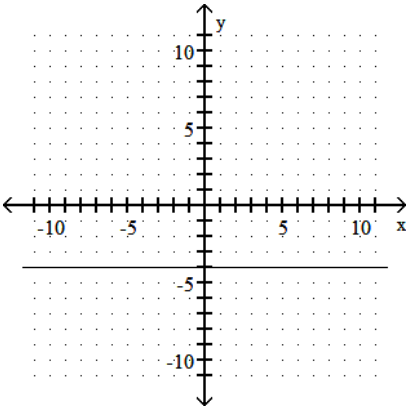



C)




D)




Solve.

40) 8% of 3500 is what? 40) _____

A) 28,000 B) 280 C) 28 D) 2800

Answer Key
Testname: MATH 10 PRACTICE PLACEMENT

1) A
2) B
3) D
4) B
5) D
6) A
7) C
8) B
9) B
10) C
11) B
12) A
13) D
14) B
15) C
16) C
17) B
18) D
19) B
20) C
21) A
22) D
23) A
24) C
25) D
26) C
27) C
28) D
29) B
30) D
31) A
32) C
33) B
34) B
35) B
36) B
37) A
38) D
39) D
40) B