

Practice Test

Date _____ Period _____

Evaluate each using the values given.

1) $4b \times -\frac{7c}{5}$; use $b = -2$, and $c = -5$

2) $x - (z + y + x - 9)$; use $x = -7$, $y = 7$, and $z = -7$

- A) 9 B) 19 C) 17 D) 0

Find each product.

3) $(-x + 8)(-5x + 8)$

4) $(2b + 2)^2$

- A)
- $49b^2 - 64$
- B)
- $4b^2 - 4$
-
- C)
- $4b^2 + 4$
- D)
- $4b^2 + 8b + 4$

5) $(3x - 4)^2$

- A)
- $3x + 16$
- B)
- $9x^2 + 16$
-
- C)
- $9x^2 - 16$
- D)
- $9x^2 - 24x + 16$

Factor each completely.

6) $6xy + 42x + 8y + 56$

Simplify each expression.

7) $6(5n - 3) - 1$

8) $3(8 + 3k) - 5k(k - 2)$

$$9) \frac{x-3}{8x-24} \div \frac{1}{x+6}$$

$$10) -4(-6+2n) - 2n$$

- A) $11 + 32n$ B) $10 + 32n$
 C) $24 - 10n$ D) $5 + 32n$

$$11) \frac{63k^2 + 81k}{45k^2 - 81k} \cdot \frac{63 - 26k - 5k^2}{7k^2 + 65k + 72}$$

- A) $\frac{30k^3}{k-6}$ B) $\frac{2}{3k^2(k+7)}$
 C) $\frac{-7-k}{k+8}$ D) $\frac{5(k-5)}{k+5}$

$$12) \frac{6}{\frac{1}{2} + \frac{36}{x}}$$

- A) $\frac{1}{21}$ B) $\frac{12x}{x+72}$
 C) $\frac{6x-9x^2}{4}$ D) $\frac{12}{2x+9x^2}$

$$13) \frac{2}{v+4} - \frac{8v}{v-4}$$

- A) $\frac{-37v - 12 - 6v^2}{(v-4)(v+4)}$
 B) $\frac{-29v - 12 - 8v^2}{(v-4)(v+4)}$
 C) $\frac{24v + 8v^2}{(v-4)(v+4)}$
 D) $\frac{-30v - 8 - 8v^2}{(v-4)(v+4)}$

Simplify.

$$14) -2\sqrt{27} + 2\sqrt{2} + 2\sqrt{27}$$

$$15) \frac{4}{\sqrt{2}-2}$$

- A) $\frac{-\sqrt{15}+5}{2}$
 B) $\frac{\sqrt{2}-2}{4}$
 C) $-2\sqrt{2}-4$
 D) $\frac{-2\sqrt{5}+10\sqrt{3}}{35}$

Solve each equation.

$$16) -6(5+4x) + 11x = -4(x+3)$$

$$17) -8m - 26 = -2(1 + 6m)$$

- A) $\{4\}$ B) $\{2\}$
 C) $\{0\}$ D) $\{6\}$

$$18) 7m - 8(2m - 1) = 14 - 3m$$

- A) $\{4\}$ B) $\{-11\}$
 C) $\{-1\}$ D) $\{3\}$

$$20) 1 = \sqrt{n - 4}$$

$$19) -2 + x^{\frac{3}{5}} = 6$$

- A) $\{10, 0\}$ B) $\{0\}$
 C) $\{-10, 0\}$ D) $\{32\}$

$$21) \frac{7}{2k+2} + \frac{1}{2k^2+2k} = \frac{4k}{k+1}$$

$$22) \frac{1}{7r-3} = \frac{3}{7r-3} - 1$$

- A) $\left\{\frac{5}{7}\right\}$ B) $\left\{-\frac{19}{6}\right\}$
 C) $\left\{\frac{19}{6}\right\}$ D) $\{-3\}$

$$24) 3n^2 + 4 = -2$$

$$23) \frac{5}{n} + \frac{1}{n^2 - n} = \frac{n+4}{n^2 - n}$$

- A) $\{2\}$ B) $\{6\}$
 C) $\{-6\}$ D) $\left\{\frac{7}{6}\right\}$

Solve each inequality.

$$25) |p - 9| < 8$$

$$26) -203 > 7(1 + 5x)$$

- A) $x < -6$ B) $x > 7$
 C) $x < 7$ D) $x < -29$

$$27) -88 \geq -2(2 - 6m)$$

- A) $m \leq -7$ B) $m \leq 4$
 C) $m \leq -2$ D) $m \leq -37$

Simplify each expression.

28) $\frac{6p^2 - 27p}{9p^2 - 9p}$

A) $\frac{2p - 9}{3(p - 1)}$; $\{0, 1\}$

B) $\frac{7p - 10}{5p + 9}$; $\left\{-\frac{9}{5}\right\}$

C) $\frac{7p - 5}{5p + 7}$; $\left\{-\frac{7}{5}\right\}$

D) $\frac{3(p - 1)}{2p - 9}$; $\left\{0, \frac{9}{2}\right\}$

30) $n^2 - 14n - 36 = -9$

A) $\{-1, -17\}$

B) $\{7 + 2\sqrt{19}, 7 - 2\sqrt{19}\}$

C) $\{-7 + \sqrt{22}, -7 - \sqrt{22}\}$

D) $\{7 + \sqrt{22}, 7 - \sqrt{22}\}$

29) $6a^2 + 30a = 0$

A) $\{2, 0\}$ B) $\{5, 0\}$

C) $\{-5, 0\}$ D) $\{-3, 0\}$

Solve each compound inequality.

31) $-13 \leq 5 - 3x \leq 32$

A) $-9 \leq x \leq 6$ B) $-7 < x \leq -6$

C) $x \leq -6$ D) $x < 1$

Use the discriminant to determine the number of real solutions to each equation.

32) $-14x^2 + 17 = 3x + 14$

A) One B) None

C) Two

33) You buy a bag of gravel that costs \$5.70 per pound. The weight that is listed on the bag is 10.20 pounds. If the scale that weighed the gravel is only accurate to within 0.15 of a pound, how much money might you have been overcharged or undercharged? Round your answer to the nearest penny.

34) What is the domain of $\frac{3x + 2}{\sqrt{4x - 24}}$. Write the answer in interval notation.

35) You are considering two job offers. The first job pays \$2500 per month. The second job pays \$1500 per month plus a commission of 8% of your gross sales. How much must you earn in gross sales for the second job to pay more per month than the first job?

Answers to Practice Test (ID: 1)

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|--------------------------------------|-----------------------|----------------------|---------------------------------|
| 1) -56 | 2) A | 3) $5x^2 - 48x + 64$ | 4) D |
| 5) D | 6) $2(3x + 4)(y + 7)$ | 7) $30n - 19$ | 8) $24 + 19k - 5k^2$ |
| 9) $\frac{x + 6}{8}$ | 10) C | 11) C | 12) B |
| 13) D | 14) $2\sqrt{2}$ | 15) C | 16) $\{-2\}$ |
| 17) D | 18) C | 19) D | 20) $\{5\}$ |
| 21) $\left\{1, -\frac{1}{8}\right\}$ | 22) A | 23) A | 24) $\{i\sqrt{2}, -i\sqrt{2}\}$ |
| 25) $1 < p < 17$ | 26) A | 27) A | 28) A |
| 29) C | 30) B | 31) A | 32) C |
| 33) \$0.38 | 34) $(6, \infty)$ | 35) $x > \$12,500$ | |