Placement pretest 30 86 180 234 TSI questions for intermediate algebra m032000 03301600 NEW NEW

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

Factor the GCF from the polynomial.

1) $4x^5 + 16x^3$ 1) _____

A) $4x^3(x^2 + 4)$ B) $x^5(4x^2 + 16)$ C) $4x^4(x + 4x)$ D) $4(x^5 + 4x^3)$

Answer: A
Objective: (12.2) Factor Out the Greatest Common Factor in Polynomials
final149 interactmath 12.2 #47,51

Factor the trinomial completely. If the trinomial cannot be factored, say it is prime.

2) $x^2 + x - 20$ 2) _____

A) $(x - 5)(x + 4)$ B) $(x + 1)(x - 20)$ C) prime D) $(x - 4)(x + 5)$

Answer: D
Objective: (12.3) Factor Trinomials of the Form x^2 + bx + c
final153 interactmath 12.2 #63

3) $x^2 + 13xy + 36y^2$ 3) _____

A) $(x - 9y)(x + y)$ B) prime C) $(x + 9y)(x + 4y)$ D) $(x - 9y)(x + 4y)$

Answer: C
Objective: (12.3) Factor Trinomials of the Form x^2 + bx + c
final157 interactmath 12.2 #37

4) $4x^2 + 12x - 40$ 4) _____

A) $4(x + 2)(x - 5)$ B) $4(x - 2)(x + 5)$ C) $(4x + 8)(x - 5)$ D) $(x - 2)(4x + 20)$

Answer: B
Objective: (12.3) Factor Out the GCF, Then Factor x^2 + bx + c
final158 interactmath 12.2 #45

Factor the polynomial completely using the trial and error method.

5) $6x^2 - x - 7$ 5) _____

A) $(6x - 1)(x + 7)$ B) $(6x - 7)(x + 1)$ C) $(6x + 1)(x - 7)$ D) $(6x + 7)(x - 1)$

Answer: B
Objective: (12.4) Factor ax^2 + bx + c, a ≠ 1, Using Trial and Error
fin159 interactmath 12.3 #27

Factor completely. If the polynomial is prime, state so.

6) $81x^2 - 64$ 6) _____

A) $(9x + 8)^2$ B) prime C) $(9x + 8)(9x - 8)$ D) $(9x - 8)^2$

Answer: C
Objective: (12.5) Factor Difference of Two Squares
final160 interactmath 12.4 #39,41

Factor completely. If a polynomial cannot be factored, say it is prime.

7) $a^2 - 2ab - 24b^2$ 7) _____

A) $(a - 4b)(a + 6b)$ B) prime C) $(a - 4b)(a + b)$ D) $(a + 4b)(a - 6b)$

Answer: D
Objective: (12.6) Factor Polynomials Completely
fin163 interactmath 12.2 #43

8) $5y^3 - 5y^2 - 100y$ 8) _____

A) $5y(y - 4)(y + 5)$ B) $(y - 4)(5y^2 + 25)$

C) $5y(y + 4)(y - 5)$ D) $(5y^2 + 20y)(y - 5)$

Answer: C
Objective: (12.6) Factor Polynomials Completely
fin165 interactmath 12.2 #47

Solve the equation by factoring.

9) $x^2 + 2x - 48 = 0$ 9) _____

A) $\{-8, 6\}$ B) $\{8, -6\}$ C) $\{8, 6\}$ D) $\{-8, 1\}$

Answer: A
Objective: (12.7) Solve Quadratic Equations Using the Zero-Product Property
final170 interactmath 12.6 #35,37

10) $2x^2 - 3x - 5 = 0$ 10) _____

A) $\left\{\frac{2}{5}, 0\right\}$ B) $\left\{\frac{2}{5}, -1\right\}$ C) $\left\{\frac{5}{2}, -1\right\}$ D) $\left\{\frac{2}{5}, 1\right\}$

Answer: C
Objective: (12.7) Solve Quadratic Equations Using the Zero-Product Property
final172 interactmath 12.6 #41

Perform the indicated operation.

11) $\frac{8m^2p}{33p^4} \cdot \frac{11mp^3}{24m^7}$ 11) _____

A) $\frac{m^4}{9}$ B) $\frac{1}{9m^{10}}$ C) $\frac{m^{10}}{9}$ D) $\frac{1}{9m^4}$

Answer: D
Objective: (13.3) Multiply Rational Expressions
fin176 interactmath 13.2 #15,17

12) $\frac{x^2 - 3x}{x^2 - 9} \div \frac{x + 3}{x^2 + 6x + 9}$ 12) _____

A) $\frac{x}{(x + 3)(x + 3)}$ B) $-x$ C) $\frac{1}{x}$ D) x

Answer: D
Objective: (13.3) Divide Rational Expressions
fin180 interactmath 13.2 #25

13) $\frac{m^2 - 9m}{m - 6} + \frac{18}{m - 6}$ 13) _____

A) $m + 3$ B) $m - 6$ C) $\frac{m^2 - 9m + 18}{m - 6}$ D) $m - 3$

Answer: D
Objective: (13.4) Add Rational Expressions With a Common Denominator
fin181 interactmath 13.3 quick check 13.3.4

Find the function value.

14) Find f(3) when $f(x) = x^2 + 3x - 4$. 14) _____

A) -4 B) 4 C) 22 D) 14

Answer: D

Objective: (14.4) Find the Value of a Function

final188 interactmath 14.3 #59

15) $f(x) = \frac{x + 5}{14x - 10}$; f(-10) 15) _____

A) $\frac{1}{26}$ B) $-\frac{1}{12}$ C) $\frac{1}{30}$ D) $-\frac{1}{30}$

Answer: C

Objective: (14.4) Find the Value of a Function

final190 interactmath 14.3 #71

Solve the absolute value equation.

16) $|x + 1| = 7$ 16) _____

A) {-8, 6} B) {-6} C) {8, 6} D) ∅

Answer: A

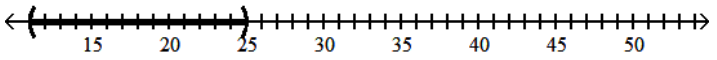
Objective: (14.8) Solve Absolute Value Equations

fin195 interactmath 14.7 #45

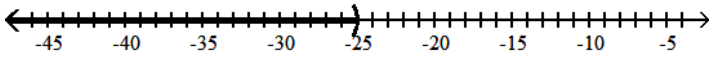
Solve the inequality. Graph the solution set, and state the solution set in interval notation.

17) $|x + 18| < 7$ 17) _____

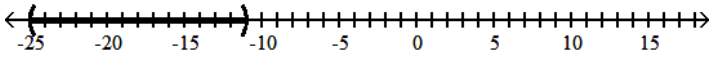
A) (11, 25)



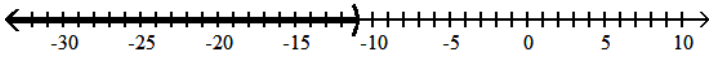
B) (-∞, -25)



C) (-25, -11)



D) (-∞, -11)

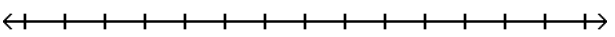


Answer: C

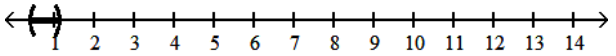
Objective: (14.8) Solve Absolute Value Inequalities Involving < or ≤

fin196 interactmath 14.7 #67

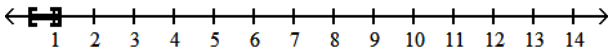
18) $|8k - 6| \geq 3$ 18) _____



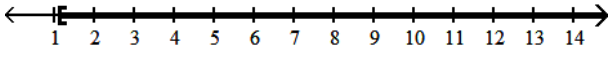
A) $\left[\frac{3}{8}, \frac{9}{8}\right]$



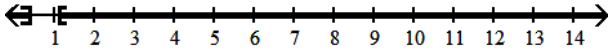
B) $\left[\frac{3}{8}, \frac{9}{8}\right]$



C) $\left[\frac{9}{8}, \infty\right)$



D) $\left(-\infty, \frac{3}{8}\right] \cup \left[\frac{9}{8}, \infty\right)$



Answer: D
Objective: (14.8) Solve Absolute Value Inequalities Involving > or ≥
fin197 interactmath 14.7 #79

Evaluate the expression, if possible.

19) $16^{1/4}$ 19) _____

A) 16 B) 32 C) 8 D) 2

Answer: D
Objective: (15.3) Evaluate Expressions of the Form a^(1/n)
fin199 interactmath 15.2 #59,63

Simplify the radical expression. Assume that all variables represent positive real numbers.

20) $\sqrt{300k^7q^8}$ 20) _____

A) $10k^3q^4\sqrt{3}$ B) $10k^7q^8\sqrt{3k}$ C) $10k^3q^4\sqrt{3k}$ D) $10q^4\sqrt{3k^7}$

Answer: C
Objective: (15.4) Use the Laws of Exponents to Simplify Radical Expressions
fin200 interactmath 15.4 #55

21) $\sqrt[3]{343x^4y^5}$ 21) _____

A) $7xy\sqrt{xy^2}$ B) $7xy\sqrt[3]{xy}$ C) $7xy\sqrt[3]{xy^2}$ D) $3xy\sqrt[3]{xy^2}$

Answer: C
Objective: (15.4) Use the Laws of Exponents to Simplify Radical Expressions
fin201 interactmath 15.4 #57

Use the product rule to simplify the expression. Assume that the variables can be any real number.

22) $\sqrt[3]{32}$ 22) _____

A) $2\sqrt[3]{8}$ B) 2 C) $2\sqrt[3]{4}$ D) 8

Answer: C
Objective: (15.5) Use the Product Property to Simplify Radical Expressions
fin203 interactmath 15.4 #39

Solve the equation.

23) $\sqrt{x + 5} = 6$ 23) _____

A) {41} B) {121} C) {36} D) {31}

Answer: D
Objective: (15.9) Solve Radical Equations Containing One Radical
final207 interactmath 15.8 #15

Multiply. Write the result in the form a + bi.

24) (6 - 3i)(5 + 9i) 24) _____

A) $-27i^2 + 39i + 30$ B) 57 - 39i C) 57 + 39i D) 3 - 69i

Answer: C
Objective: (15.10) Multiply Complex Numbers
fin211 interactmath 15.9 #55

Divide.

25) $\frac{9 + 5i}{9 + 4i}$ 25) _____

A) $\frac{61}{65} + \frac{9}{65}i$ B) $\frac{101}{97} + \frac{9}{97}i$ C) $\frac{61}{97} - \frac{81}{97}i$ D) $\frac{101}{65} + \frac{9}{65}i$

Answer: B
Objective: (15.10) Divide Complex Numbers
fin212 interactmath 15.9 #91,93

Use the square root property to solve the equation.

26) $(x - 7)^2 = 4$ 26) _____

A) {9, 5} B) {2, -2} C) {11} D) {5, -9}

Answer: A
Objective: (16.2) Solve Quadratic Equations Using the Square Root Property
fin215 interactmath 16.1 quick check 16.1.7

Solve the equation by completing the square.

27) $x^2 + 4x - 45 = 0$ 27) _____

A) {-5, 9} B) $\{\sqrt{7}, -1\}$ C) {5, -9} D) {-36, -9}

Answer: C
Objective: (16.2) Solve Quadratic Equations by Completing the Square
fin217 interactmath 16.1 #53,55

Use the quadratic formula to solve the equation.

28) $x^2 + 12x + 14 = 0$ 28) _____

A) $\{6 + \sqrt{22}\}$ B) $\{6 - \sqrt{14}, 6 + \sqrt{14}\}$
C) $\{-6 - \sqrt{22}, -6 + \sqrt{22}\}$ D) $\{-12 + \sqrt{14}\}$

Answer: C
Objective: (16.3) Solve Quadratic Equations Using the Quadratic Formula
fin221 interactmath 16.2 #33,51,57

29) $3x^2 + 10x + 4 = 0$ 29) _____

A) $\left\{\frac{-5 - \sqrt{13}}{3}, \frac{-5 + \sqrt{13}}{3}\right\}$

B) $\left\{\frac{-5 - \sqrt{13}}{6}, \frac{-5 + \sqrt{13}}{6}\right\}$

C) $\left\{\frac{-5 - \sqrt{37}}{3}, \frac{-5 + \sqrt{37}}{3}\right\}$

D) $\left\{\frac{-10 - \sqrt{13}}{3}, \frac{-10 + \sqrt{13}}{3}\right\}$

Answer: A

Objective: (16.3) Solve Quadratic Equations Using the Quadratic Formula

fin225 interactmath 16.2 #31

30) $x^2 + 10x + 34 = 0$ 30) _____

A) {-5 + 3i} B) {-5 - 9i, -5 + 9i} C) {-2, -8} D) {-5 - 3i, -5 + 3i}

Answer: D

Objective: (16.3) Solve Quadratic Equations Using the Quadratic Formula

fin227 interactmath 16.2 quick check 16.2.8