***College Algebra, 5e* (Young)**

**Chapter 1 Equations and Inequalities**

1.6 Polynomial and Rational Inequalities

1) Solve the polynomial inequality and express the solution set in interval notation.

(x) with superscript (2) - 3*x* ≤ 10

A) (-∞, -2] ∪ [5, ∞)

B) (-∞, -2) ∪ (5, ∞)

C) (-2, 5)

D) [-2, 5]

Answer: D

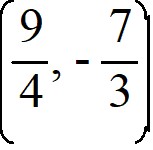
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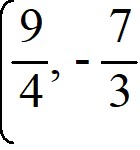
Chapter/Section: Ch 01, Sec 06

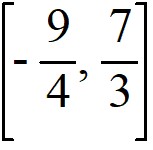
Learning Objective: Solve polynomial inequalities.

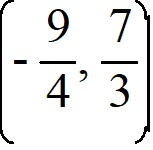
2) Solve the polynomial inequality and express the solution set in interval notation.

4(x) with superscript (2) ≤ *x* + 3

A) 

B) 

C) 

D) 

Answer: C

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve polynomial inequalities.

3) Solve the polynomial inequality and express the solution set in interval notation.

(x) with superscript (2) *>* 8*x* - 15

A) (-∞, 3) ∪ (5, ∞)

B) (-∞, 3] ∪ [5, ∞)

C) (3, 5)

D) [3, 5]

Answer: A

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve polynomial inequalities.

4) Solve the polynomial inequality and express the solution set in interval notation.

(u) with superscript (2) ≥ 10*u*

A)(0, 10)

B) (-∞, 0) ∪ (10, ∞)

C) (-∞, 0] ∪ [10, ∞)

D) [0, 10]

Answer: C

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve polynomial inequalities.

5) Solve the polynomial inequality and express the solution set in interval notation.

(t) with superscript (2) ≤ -16*t*

A)(-16, 0)

B) (-∞, -16) ∪ (0, ∞)

C) (-∞, -16] ∪ [0, ∞)

D) [-16, 0]

Answer: D

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve polynomial inequalities.

6) Solve the polynomial inequality and express the solution set in interval notation.

(y) with superscript (2) < 2*y*

A)(0, 2)

B) (-∞, 0) ∪ (2, ∞)

C) (-∞, -2) ∪ (2, ∞)

D) [0, 2]

Answer: A

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve polynomial inequalities.

7) Solve the polynomial inequality and express the solution set in interval notation.

*-*(x) with superscript (2) *>* -16

A) (-∞, -4) ∪ (4, ∞)

B) (-∞, ∞)

C) (-4, 4)

D) Empty set

Answer: C

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve polynomial inequalities.

8) Solve the polynomial inequality and express the solution set in interval notation.

-(t) with superscript (2) ≤ -1

A) (-∞, -1] ∪ [1, ∞)

B) (-∞, ∞)

C) [-1, 1]

D) Empty set

Answer: A

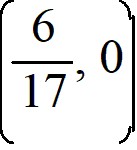
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Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve polynomial inequalities.

9) Solve the polynomial inequality and express the solution set in interval notation.

17(u) with superscript (2) > 6*u*

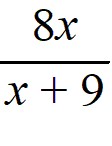
Answer: (-∞, ∞) ∪ 

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve polynomial inequalities.

10) Solve the rational inequality and express the solution set in interval notation.

 < 0

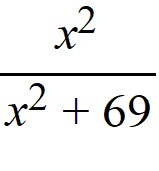
Answer: (-9, 0)

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

11) Solve the rational inequality and express the solution in interval notation.

 ≥ 0

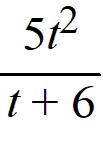
Answer: (-∞, ∞)

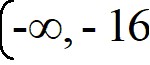
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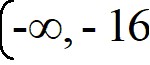
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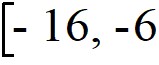
Learning Objective: Solve rational inequalities.

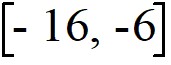
12) Solve the rational inequality.

 ≥ 8*t*

A) ∪ (-6, 0]

B)  ∪ [-6, 0]

C)  ∪ [0, ∞)

D)  ∪ [0, ∞)

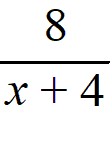
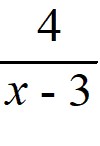
Answer: A

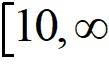
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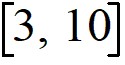
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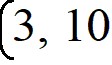
Learning Objective: Solve rational inequalities.

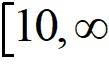
13) Solve the rational inequality.

 -  ≤ 0

A) (-4, 3) ∪ 

B) (-∞, -4] ∪ 

C) (-∞, -4] ∪ 

D) (-4, 3] ∪ 

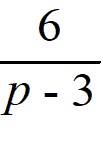
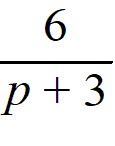
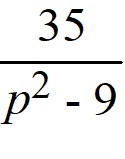
Answer: C

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

14) Solve the rational inequality.

 -  ≥ 

A) [-3, 3]

B) (-∞, -3) ∪ (3, ∞)

C) (-∞, -3] ∪ [3, ∞)

D) (-3, 3)

Answer: B

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

15) Solve the polynomial inequality and express the solution set in interval notation.

10(x) with superscript (2) ≤ -3*x* + 18

A) (-3/2, 6/5)

B) [-3/2, 6/5]

C) [-6/5, 3/2]

D) (-6/5, 3/2)

Answer: B

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve polynomial inequalities.

16) Solve the polynomial inequality and express the solution set in interval notation.

21(x) with superscript (2) > 36*x* + 81

A) (-9/7, 3)

B) (-∞, -9/7) ∪ (3, ∞)

C) (-∞, -9/7] ∪ (3, ∞)

D) (-∞, -3) ∪ (9/7, ∞)

Answer: B

Diff: 3 Var: 1

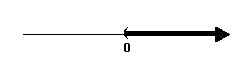
Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve polynomial inequalities.

17) Solve the rational inequality and graph the solution on the real number line.

(-4/x) ≤ 0

Answer:



*x* < 0

Diff: 1 Var: 1

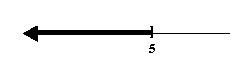
Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

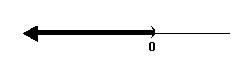
18) Solve the rational inequality and graph the solution on the real number line.

(5/x) ≤ 0

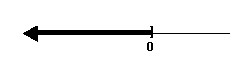
A)



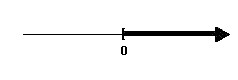
B)



C)



D)



Answer: B

Diff: 1 Var: 1

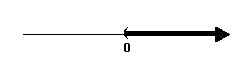
Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

19) Solve the rational inequality and graph the solution on the real number line.

(7/x) ≥ 0

Answer:



Diff: 1 Var: 1

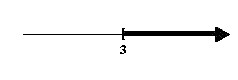
Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

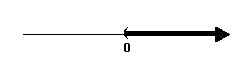
20) Solve the rational inequality and graph the solution on the real number line.

(3/x) ≥ 0

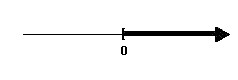
A)



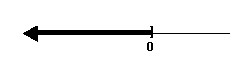
B)



C)



D)



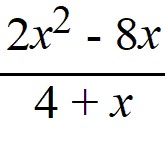
Answer: B

Diff: 1 Var: 1

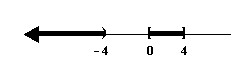
Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

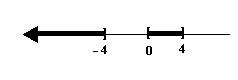
21) Solve the rational inequality and graph the solution on the real number line.

 ≤ 0

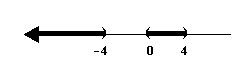
A)



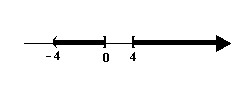
B)



C)



D)



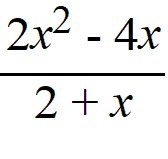
Answer: A

Diff: 3 Var: 1

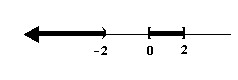
Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

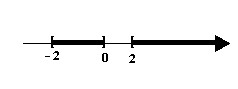
22) Solve the rational inequality and graph the solution on the real number line.

 ≥ 0

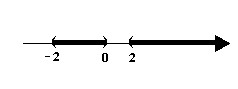
A)



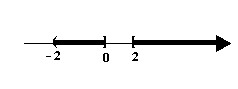
B)



C)



D)



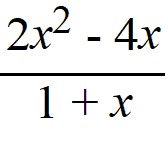
Answer: D

Diff: 3 Var: 1

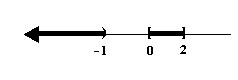
Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

23) Solve the rational inequality and graph the solution on the real number line.

 ≤ 0

Answer:

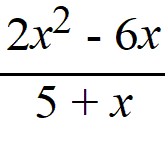


Diff: 3 Var: 1

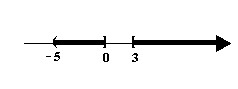
Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

24) Solve the rational inequality and graph the solution on the real number line.

 ≥ 0

Answer:

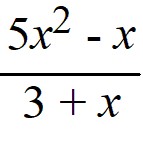


Diff: 3 Var: 1

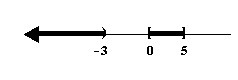
Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

25) Solve the rational inequality and graph the solution on the real number line.

 ≤ 3*x*

Answer:

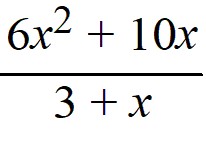


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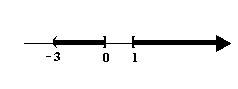
Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

26) Solve the rational inequality and graph the solution on the real number line.

 ≥ 4*x*

Answer:

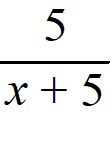
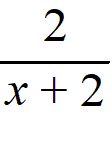
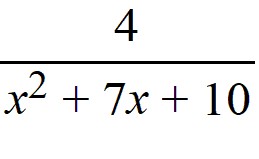


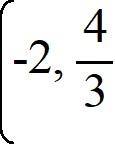
Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

27) Solve the rational inequality. Express the answer in interval notation.

 -  ≤ 

Answer: (-∞, -5) ∪ 

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 06

Learning Objective: Solve rational inequalities.

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