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

**Chapter 1 Equations and Inequalities**

1.5 Linear Inequalities

1) Rewrite in interval notation.

*x* ≤ -14

A) (-∞, -14)

B) (-∞, -14]

C) [-14, ∞)

D) (-14, ∞)

Answer: B

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Use interval notation.

2) Rewrite in interval notation.

*x* > 19

A) (-∞, 19)

B) (-∞, 19]

C) (19, ∞)

D) [19, ∞)

Answer: C

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Use interval notation.

3) Rewrite in interval notation.

3 ≤ *x* ≤ 19

A) (3, 19)

B) (3, 19]

C) [3, 19)

D) [3, 19]

Answer: D

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Use interval notation.

4) Rewrite in interval notation.

-4 < *x* ≤ 14

A) (-4, 14)

B) (-4, 14]

C) [-4, 14)

D) [-4, 14]

Answer: B

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Use interval notation.

5) Rewrite in interval notation.

-15 ≤ *x* ≤ -15

A) (-15, -15)

B) {-15}

C) [-15, -15)

D) (-∞, ∞)

Answer: B

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Use interval notation.

6) Rewrite in set notation.

(-10, -9]

A) {x | -10 < *x* ≤ -9}

B) {x | -10 < *x* < -9}

C) {x | -10 ≤ *x* < -9}

D) {x | -10 ≤ *x* ≤ -9}

Answer: A

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Use interval notation.

7) Rewrite in set notation.

[-15, 8]

A) {x | -15 < *x* ≤ 8}

B) {x | -15 ≤ *x* < 8}

C) {x | -15 < *x* < 8}

D) {x | -15 ≤ *x* ≤ 8}

Answer: D

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Use interval notation.

8) Solve and express solution in interval notation.

3*x* - 27 ≥ -12

A) [5, ∞)

B) (5, ∞)

C) (-∞, -5)

D) (-∞, -5]

Answer: A

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

9) Solve and express solution in interval notation.

-4*x* < 8

A) [-2, ∞)

B) (-2, ∞)

C) (-∞, -2)

D) (-∞, -2]

Answer: B

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

10) Solve and express solution in interval notation.

4 - 5(*x* + 9) < 9

A) [-10, ∞)

B) (-10, ∞)

C) (-∞, 10)

D) (-∞, 10]

Answer: B

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

11) Solve and express in interval notation.

-6 < 3+ 5*x* < 12

A) (-∞, 9/5)

B) [-9/5, 9/5]

C) (-9/5, 9/5)

D) [-9/5, ∞)

Answer: C

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

12) Solve and express in interval notation.

6 < 18 - 3*x* < 15

A) [1, 4]

B) (1, 4)

C) (4, 1)

D) (-4, -1)

Answer: B

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

13) Write the indicated set as a single interval, if possible.

[-15, 13) ∪ (-5, 54)

Answer: -15 ≤ *x* < 54

or:

[-15, 54)

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Apply intersection and union concepts.; Use interval notation.

14) Solve and express solution in interval notation.

-3 < 7 - *x* ≤ 10

Answer: [-3, 10)

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities; Use interval notation.

15) In your general physics class, your first four test scores are 86, 89, 79, and 73. What is the lowest score you can get on the fifth test to earn a B or better for the course? Assume each test is of equal weight and a B is any score greater than or equal to 80.

Answer: 73

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve application problems involving linear inequalities.

16) Typical markup on new cars is 13%-24%. If the sticker price is $20,499, write an inequality that gives the range of the invoice price (what the dealer paid the manufacturer for the car). Round to the nearest cent.

A) $16,531.45 < invoice price < $18,140.71

B) $23,562.07 < invoice price < $26,972.37

C) $17,834.13 < invoice price < $15,579.24

D) $15,579.24 < invoice price < $23,163.87

Answer: A

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve application problems involving linear inequalities.

17) Write the indicated set as a single interval, if possible.

[-16, 19) ∩ (7, 51)

Answer: 7 < *x* < 19

or:

(7, 19)

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Apply intersection and union concepts.

18) Write the indicated set as a single interval, if possible.

Write the indicated set as a single interval, if possible.

[-16, ∞) ∩ (1, 60)

Answer: 1 < *x* ≤ 60

or:

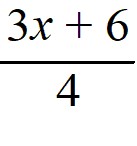
(1, 60]

Diff: 2 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Apply intersection and union concepts.

19) Solve and express solution in interval notation.

-9 <  ≤ 18

Answer: (-14, 22]

Diff: 3 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

20) Write the inequality illustrated on the number line.

_

_4

Answer: *x* > 4

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

21) Write the inequality illustrated on the number line.

_

_8

Answer: *x* < 8

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

22) Write the inequality illustrated on the number line.

_

_-12_8

Answer: -12 < *x* < 8

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

23) Express the region represented on the number line in interval notation.

_

_11

Answer: [11, ∞)

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

24) Express the region represented on the number line in interval notation.

_

_8

Answer: (∞, 8]

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

25) Express the region represented on the number line in interval notation.

_

_-11_7

Answer: (-11, 7]

Diff: 1 Var: 1

Chapter/Section: Ch 01, Sec 05

Learning Objective: Solve linear inequalities

© (2022) John Wiley & Sons, Inc. All rights reserved. Instructors who are authorized users of this course are permitted to download these materials and use them in connection with the course. Except as permitted herein or by law, no part of these materials should be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise.