

Section 3: Inequalities and indices

Section test

1) Solve the inequality $4x + 1 \geq x - 8$

(a) $x \geq \frac{7}{3}$

(b) $x \leq -3$

(c) $x \geq -3$

(d) $x \leq \frac{7}{3}$

(e) I don't know

2) Solve the inequality $\frac{x+1}{2} \leq \frac{2-x}{3}$

(a) $x \leq \frac{1}{5}$

(b) $x \geq 1$

(c) $x \geq \frac{1}{5}$

(d) $x \leq 1$

(e) I don't know

3) The largest value of x which satisfies the inequality $2(1-2x) - x > 3(x+1) + 7$ is

(a) -2

(b) -1

(c) 2

(d) 1

(e) I don't know

4) $x^2 - 5x + 4 < 0$

(a) 1, 2, 3 and 4

(b) -2 and -3

(c) -4, -3, -2 and -1

(d) 2 and 3

(e) I don't know

5) $8 + 2x - x^2 < 0$

(a) $-2 < x < 4$

(b) $x < -2$ or $x > 4$

(c) $x < -4$ or $x > 2$

(d) $-4 < x < 2$

(e) I don't know

6) $6x^2 + x - 2 \geq 0$

(a) $x \leq -\frac{1}{2}$ or $x \geq \frac{2}{3}$

(b) $-\frac{2}{3} \leq x \leq \frac{1}{2}$

(c) $x \leq -\frac{2}{3}$ or $x \geq \frac{1}{2}$

(d) $-\frac{1}{2} \leq x \leq \frac{2}{3}$

(e) I don't know

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7) $27^{2/3} =$

- (a) $\frac{1}{18}$ (b) 18
(c) $\frac{1}{9}$ (d) 9
(e) I don't know

8) $\left(\frac{4}{25}\right)^{-3/2} =$

- (a) $-\frac{125}{8}$ (b) $\frac{8}{125}$
(c) $\frac{125}{8}$ (d) $-\frac{8}{125}$
(e) I don't know

9) The expression $3a^2b \times (2ab^{-2})^3 \div 4ab^2$ can be simplified to give the expression

- (a) $\frac{6a^4}{b^7}$ (b) $\frac{6a^4}{b^{5/2}}$
(c) $\frac{20a^4}{b^7}$ (d) $\frac{20a^4}{b^{5/2}}$
(e) I don't know

10) Simplify $8^3 \times 6^{1/2} \div 32^{3/2}$

- (a) $4\sqrt{3}$ (b) $2\sqrt{3}$
(c) $3\sqrt{2}$ (d) $4\sqrt{2}$
(e) I don't know