F.2 Mathematics Worksheet 8
Ch.8 Inequalities

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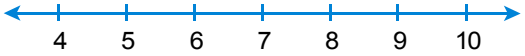
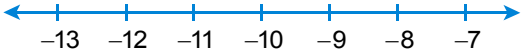
1. Represent the solutions of each of the following inequalities graphically.

(a) $x > 11$

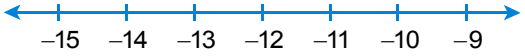
(b) $x < 9$



(c) $x \geq -10$

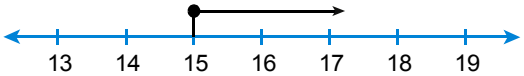


(d) $x \leq -13$

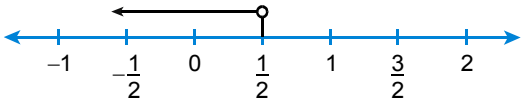


2. Write down the inequality in x shown by each of the following graphical representations.

(a)

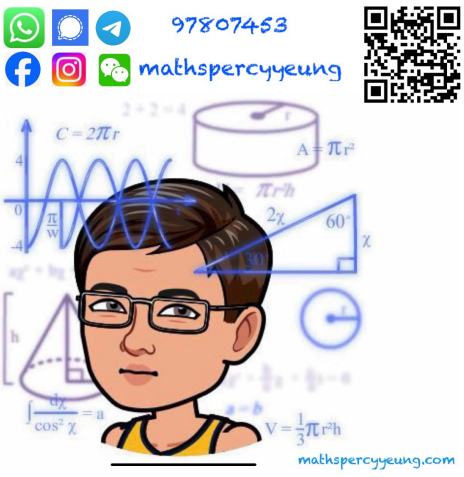


(b)



(c)

(d)



3. Express each of the following sentences in an inequality.

(a) The product of 9 and y minus 11 is greater than 3.

(b) Adding 5 to half of x is greater than x.

(c) Half of z minus 3 is greater than or equal to the product of 3 and z.

4. Add the same number to or subtract the same number from both sides of each inequality below, and obtain an inequality in the form of $x > a$ or $x < b$.

(a) $x - 8 > -10$ **(b)** $21 > 6 - x$

5. Multiply both sides of each inequality below by the same number, and obtain an inequality in the form of $x \geq a$ or $x \leq b$.

(a) $-196 \leq 7x$ **(b)** $-8x \leq -60$

6. If $x > 10$, express the ranges of values of a, b and c in inequalities.

(a) $a = 4x$ **(b)** $b = 4x + 17$ **(c)** $c = -\dfrac{4x + 17}{19}$

7. Solve each of the following inequalities and represent the solutions graphically.

(a) $2x+1>x+3$ **(b)** $4+x\geq 2x+3$ **(c)** $10-2x>x+1$

8. Solve each of the following inequalities and represent the solutions graphically.

(a) $5x+8>3$ **(b)** $\frac{4}{5}-2x\leq -\frac{1}{5}$ **(c)** $6-7x<3-4x$

9. Solve each of the following inequalities and represent the solutions graphically.

(a) $\frac{1}{3}(4x-1)>1$ **(b)** $5(x+1)\geq \frac{1}{10}$ **(c)** $3(x+7)<-4(3x+1)$

10. Solve each of the following inequalities and represent the solutions graphically.

(a) $\frac{3x+80}{4} > 2x$

(b) $\frac{x}{3} - 1 > \frac{2x}{9}$

(c) $\frac{2x}{3} - \frac{1}{4}(12+3x) > -\frac{x}{3} + 5$

11. Find the smallest value and smallest integral value of x of each of the following inequalities.

(a) $2(x-5) \leq 5(x+3)$

(b) $\frac{x+4}{5} \leq \frac{x-7}{3}$

12. Cherry went out for shopping yesterday and today, and the amount she spent today is three times the amount she spent yesterday. If she spent not more than $300 on shopping in these two days, at most how much did she spend today?

13. A store bought 250 eggs for $200 and found that 25 of them were cracked. The rest of the eggs will be sold at a percentage profit of not greater than 35%. Find the maximum selling price of each egg.

14. Sam received the same amount of the daily pocket money from Monday to Friday this week, and he got $30 more on both Saturday and Sunday. If the pocket money of Sam this week was not less than $550, at least how much daily pocket money did he get from Monday to Friday?

15. The ingredients of the nuts of Brand X, Brand Y and Brand Z in percentage are as follows:

Brand / Ingredients	X	Y	Z
Walnut	30%	25%	55%
Almond	30%	50%	30%
Hazelnut	40%	25%	15%

How many kg of nuts from Brand Z should be added to 0.5 kg of nuts from Brand X and 1 kg of nuts from Brand Y, such that there are not less than 20% of hazelnuts in the mixture?