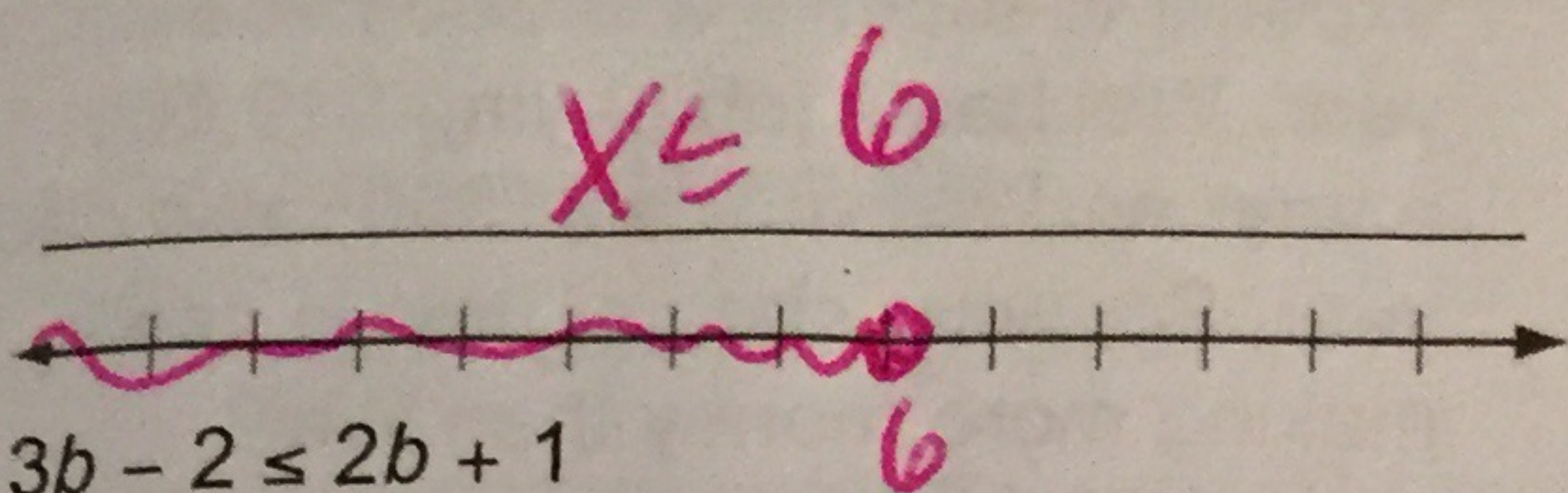


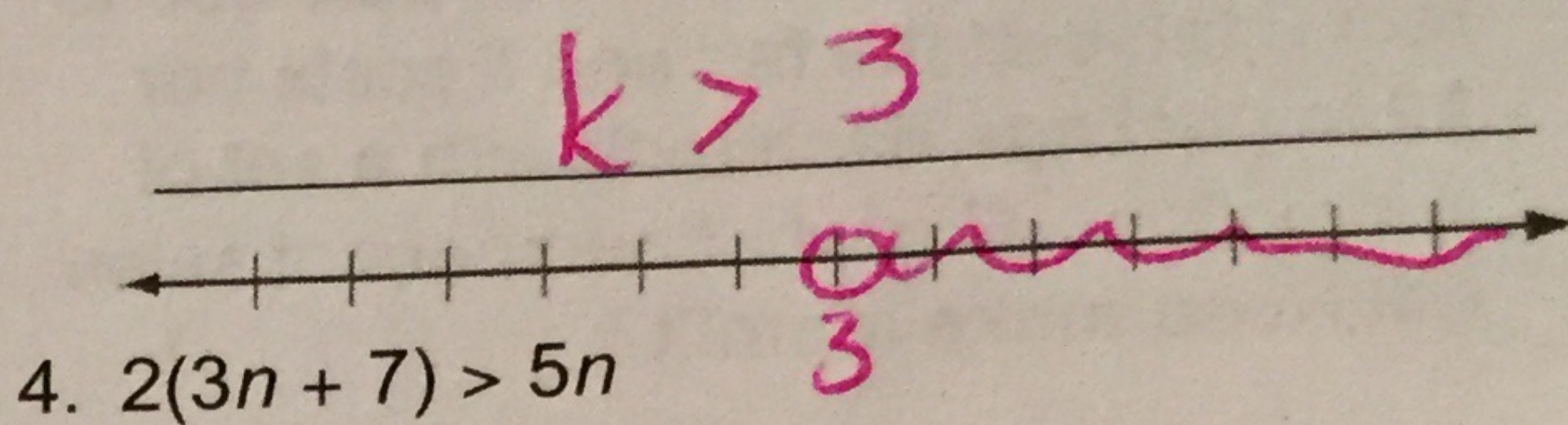
Additional Practice

Solve each inequality and graph the solutions.

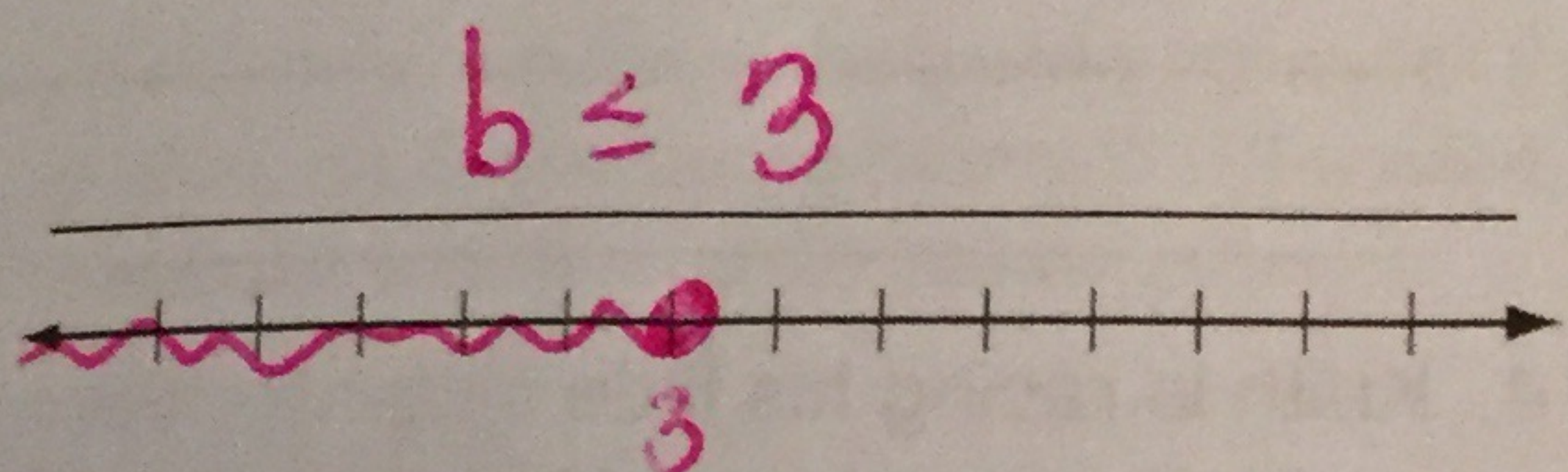
1. $2x + 30 \geq 7x$



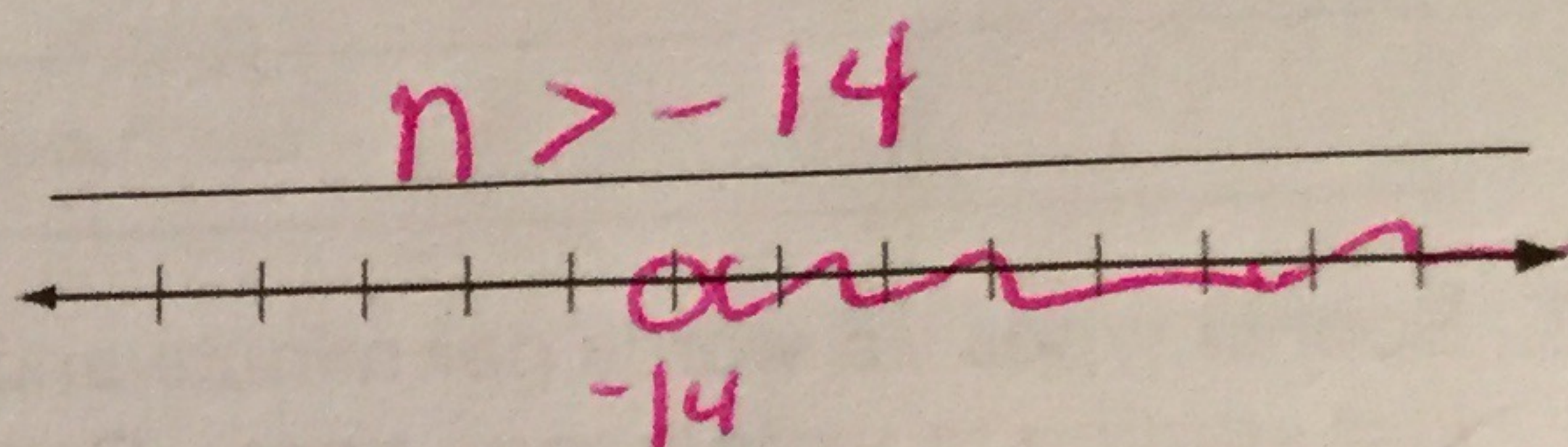
2. $2k + 6 < 5k - 3$



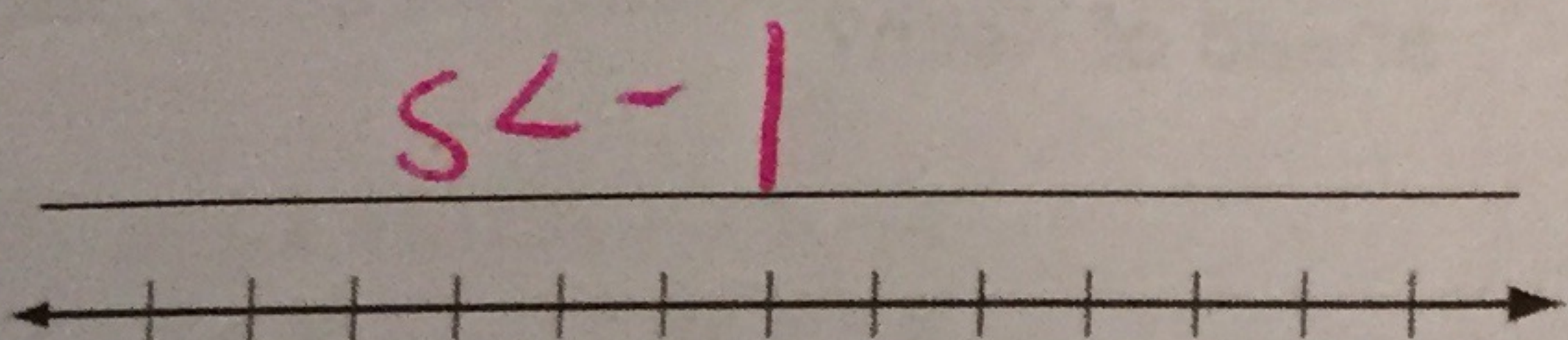
3. $3b - 2 \leq 2b + 1$



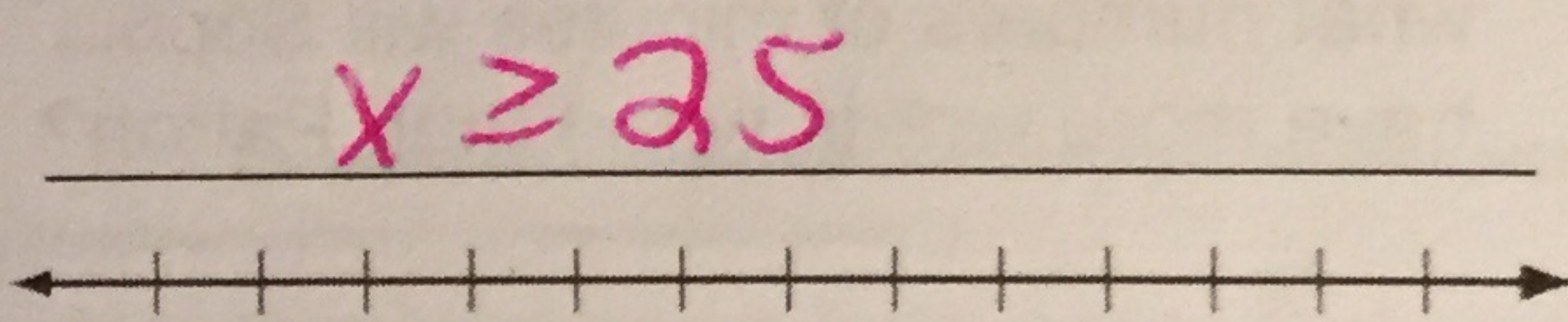
4. $2(3n + 7) > 5n$



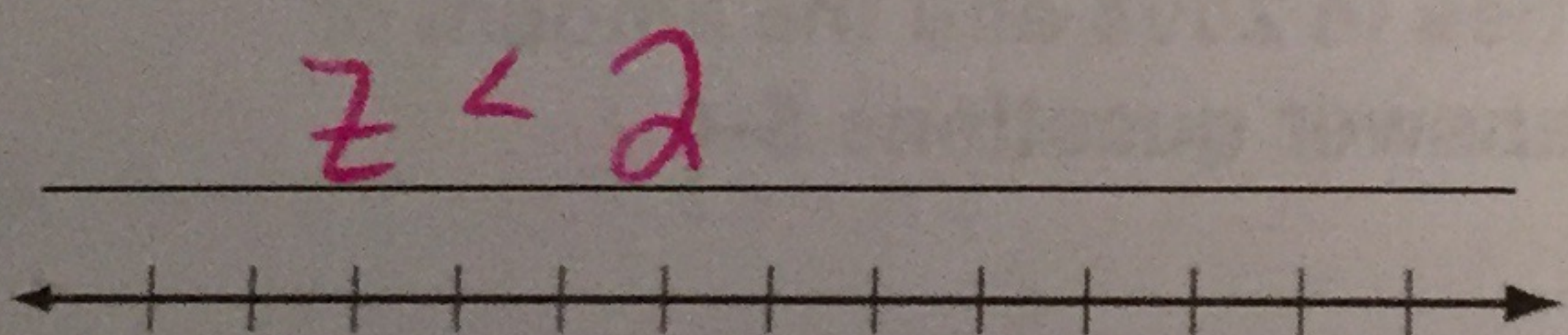
5. $5s - 9 < 2(s - 6)$



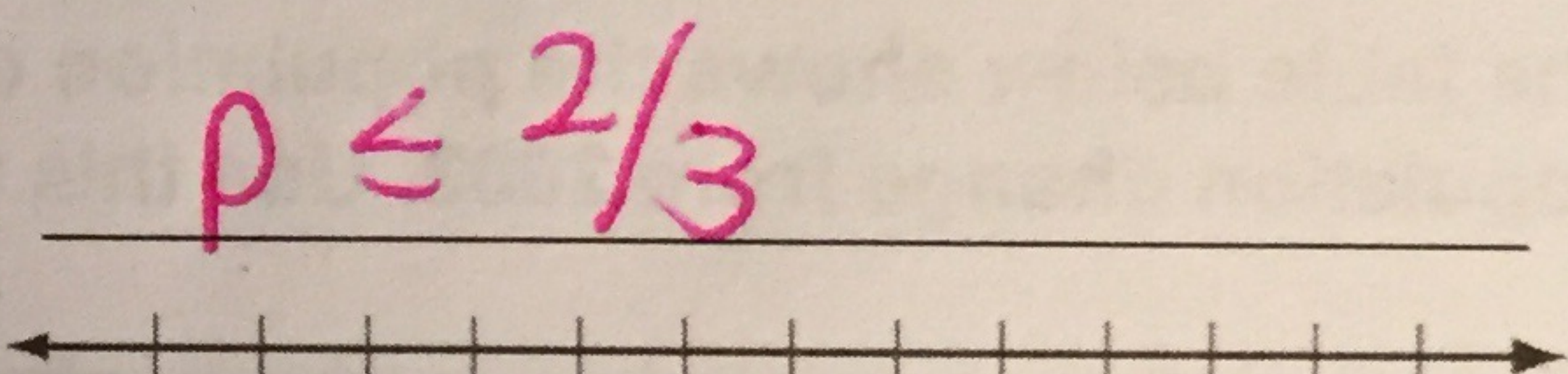
6. $-3(3x + 5) \geq -5(2x - 2)$



7. $1.4z + 2.2 > 2.6z - 0.2$



8. $\frac{7}{8}p - \frac{1}{4} \leq \frac{1}{2}p$



Solve each inequality.

9. $v + 1 > v - 6$

IS OR R

10. $3(x + 4) \leq 3x$

NS

11. $-2(8 - 3x) \geq 6x + 2$

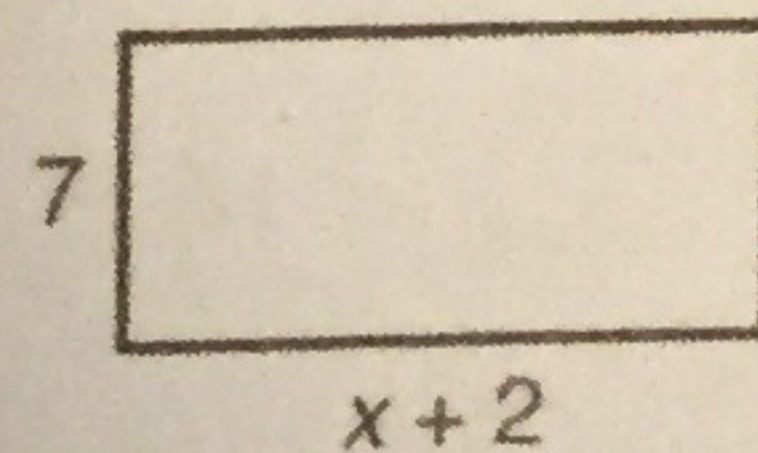
NS

Write and solve an inequality for each problem.

12. Ian wants to promote his band on the Internet. Site A offers website hosting for \$4.95 per month with a \$49.95 startup fee. Site B offers website hosting for \$9.95 per month with no startup fee. For how many months would Ian need to keep the website for Site B to be less expensive than Site A?

$9.95m < 4.95m + 49.95; m < 9.99$ for 0 to 9 months

13. For what values of x is the area of the rectangle greater than the perimeter?



$7(x+2) > 7 + (x+2) + 7 + (x+2); x > 0.8$

Problem Solving

Write and solve an inequality for each situation.

1. Rosa has decided to sell pet rocks at an art fair for \$5 each. She has paid \$50 to rent a table at the fair and it costs her \$2 to package each rock with a set of instructions. For what numbers of sales will Rosa make a profit?

$$5r > 50 + 2r$$

$$r > 16$$

3. Sophia types 75 words per minute and is just starting to write a term paper. Patton already has 510 words written and types at a speed of 60 words per minute. For what numbers of minutes will Sophia have more words typed than Patton?

$$75m > 510 + 60m$$

$$m > 34$$

2. Jamie has a job paying \$25,000 and expects to receive a \$1000 raise each year. Wei has a job paying \$19,000 a year and expects a \$1500 raise each year. For what span of time is Jamie making more money than Wei?

$$25000 + 1000y > 19000 + 1500y$$

$$y < 12$$

4. Keith is racing his little sister Pattie and has given her a 15 foot head start. She runs 5 ft/sec and he is chasing at 8 ft/sec. For how long can Pattie stay ahead of Keith?

$$15 + 5s > 8s$$

$$s < 5$$

The table below shows the population of four cities in 2004 and the amount of population change from 2003. Use this table to answer questions 5–6.

5. If the trends in this table continue, after how many years y will the population of Manchester, NH, be more than the population of Vallejo, CA? Round your answer to the nearest tenth of a year.

A $y > 0.2$

C $y > 34.6$

B $y > 6.4$

D $y > 78.6$

6. If the trends in this table continue, for how long x will the population of Carrollton, TX be less than the population of Lakewood, CO? Round your answer to the nearest tenth of a year.

E $x < 11.7$

H $x < 20.1$

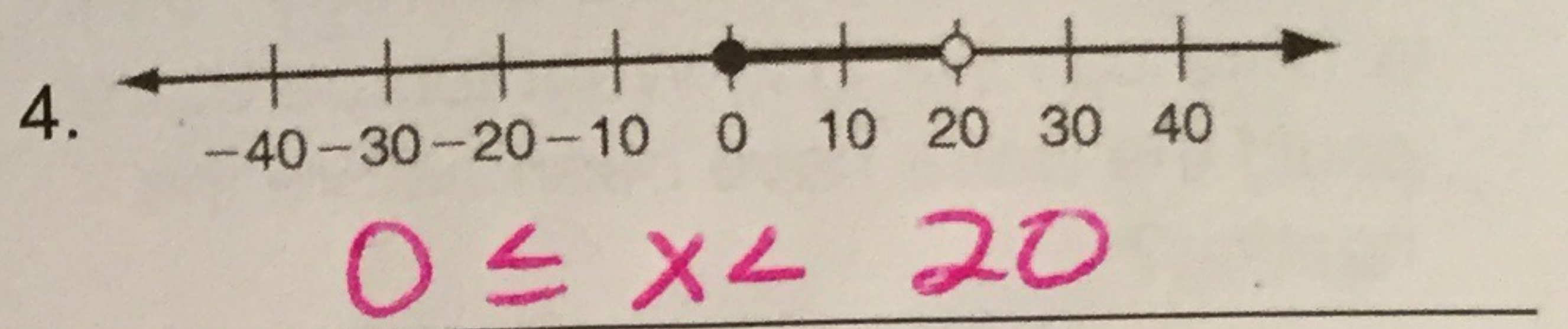
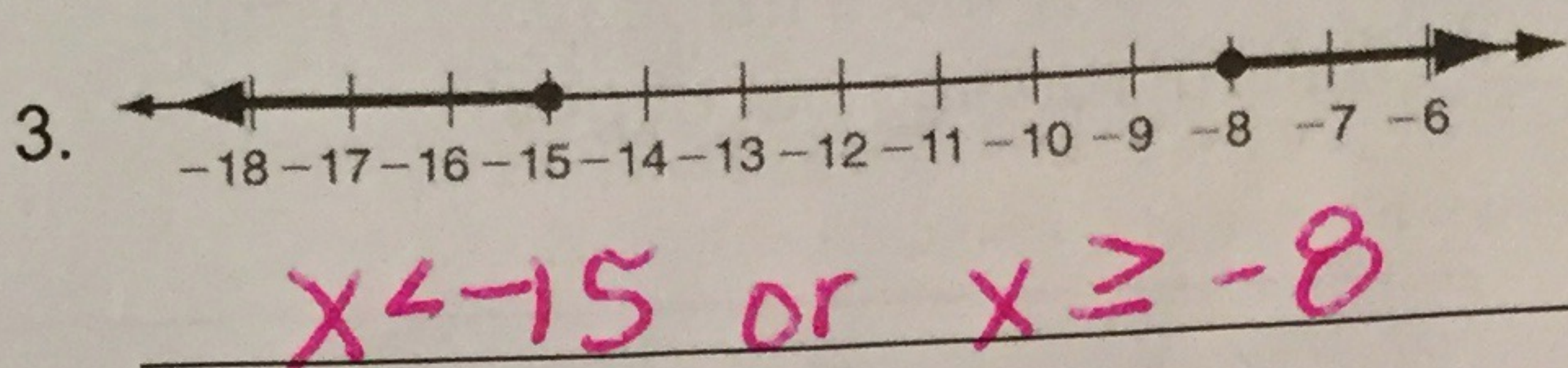
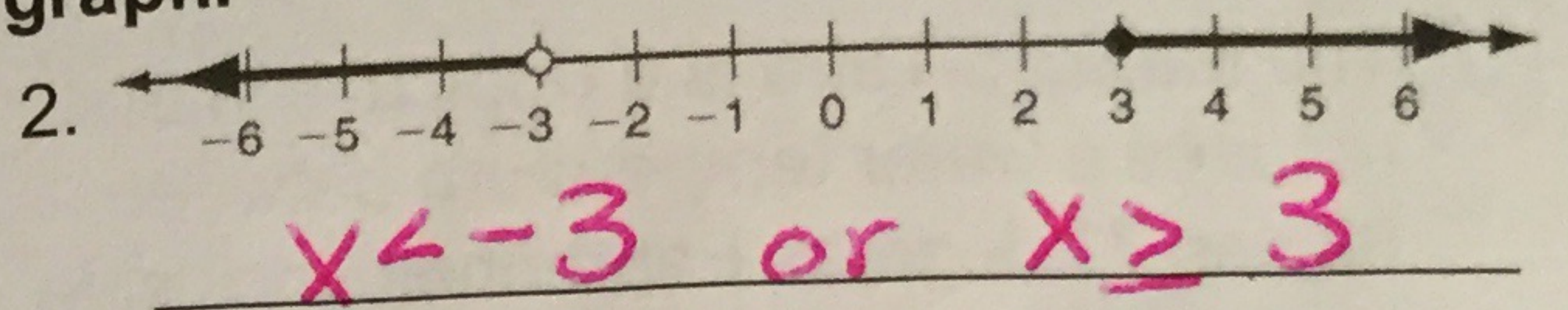
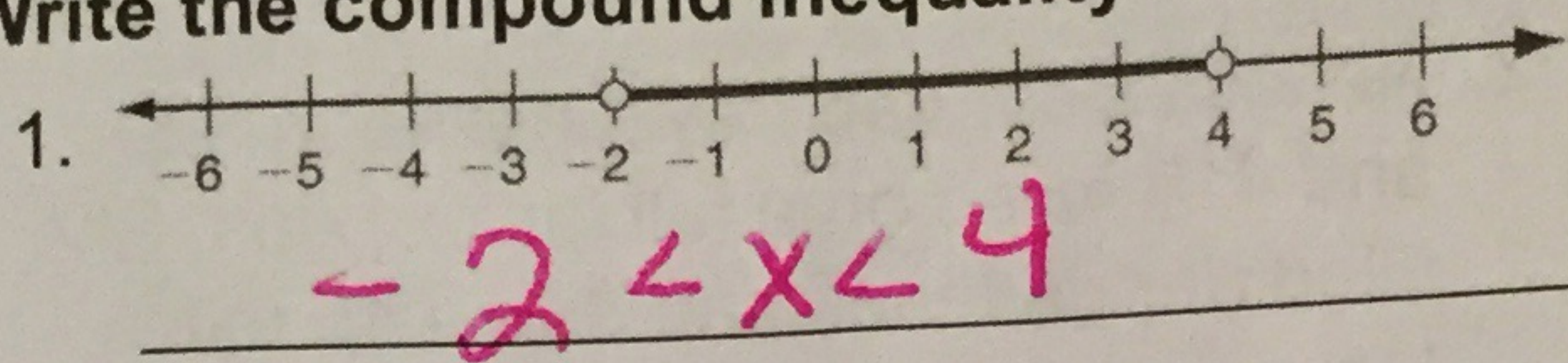
G $x < 14.6$

J $x < 28.3$

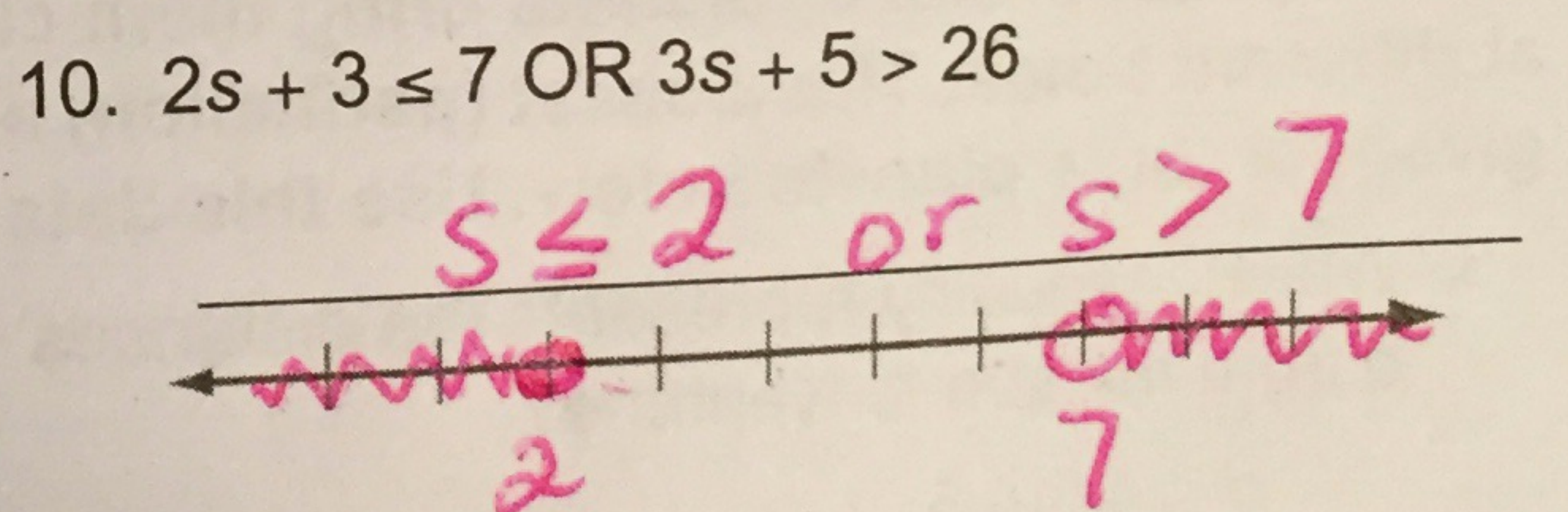
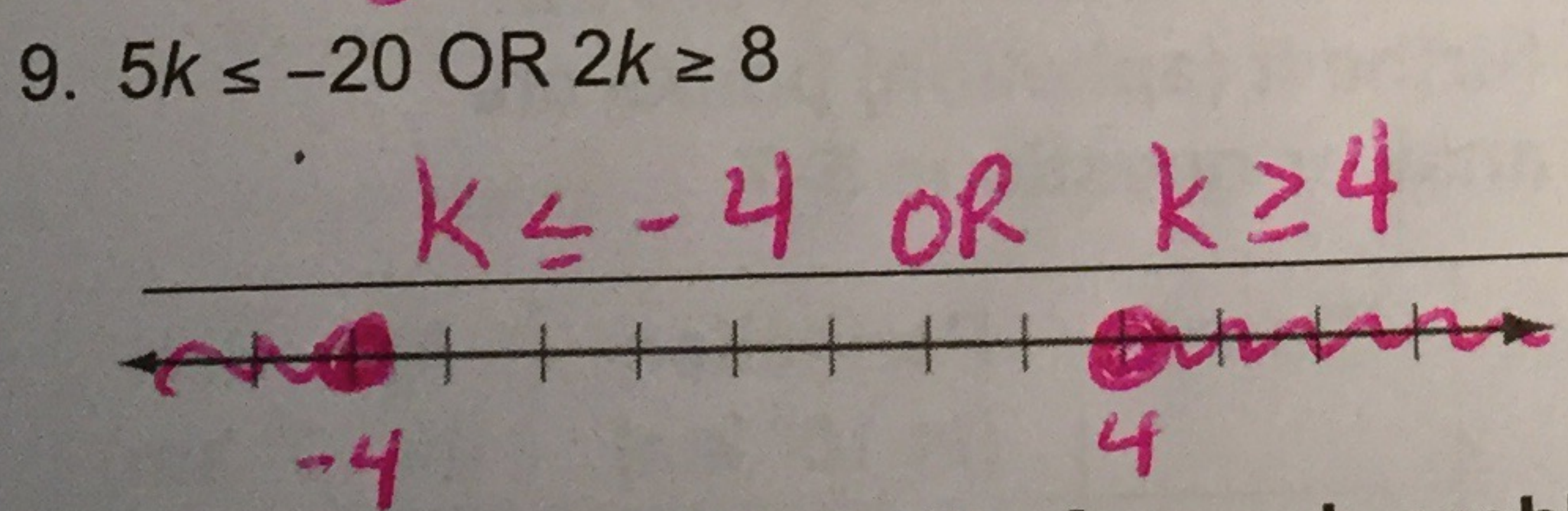
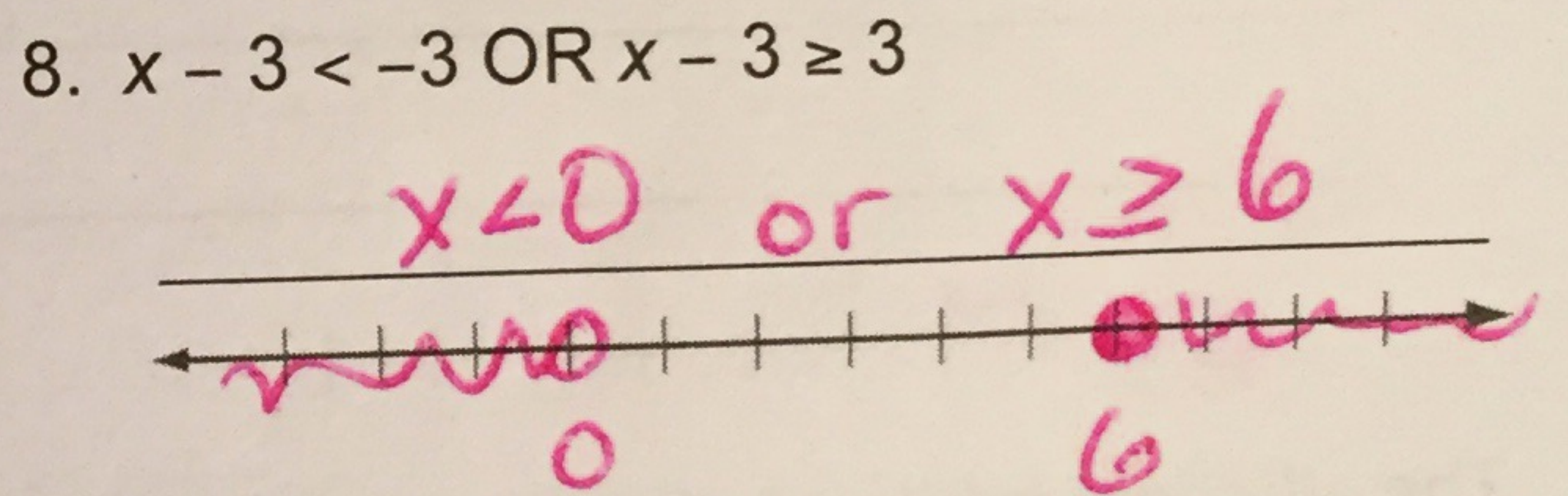
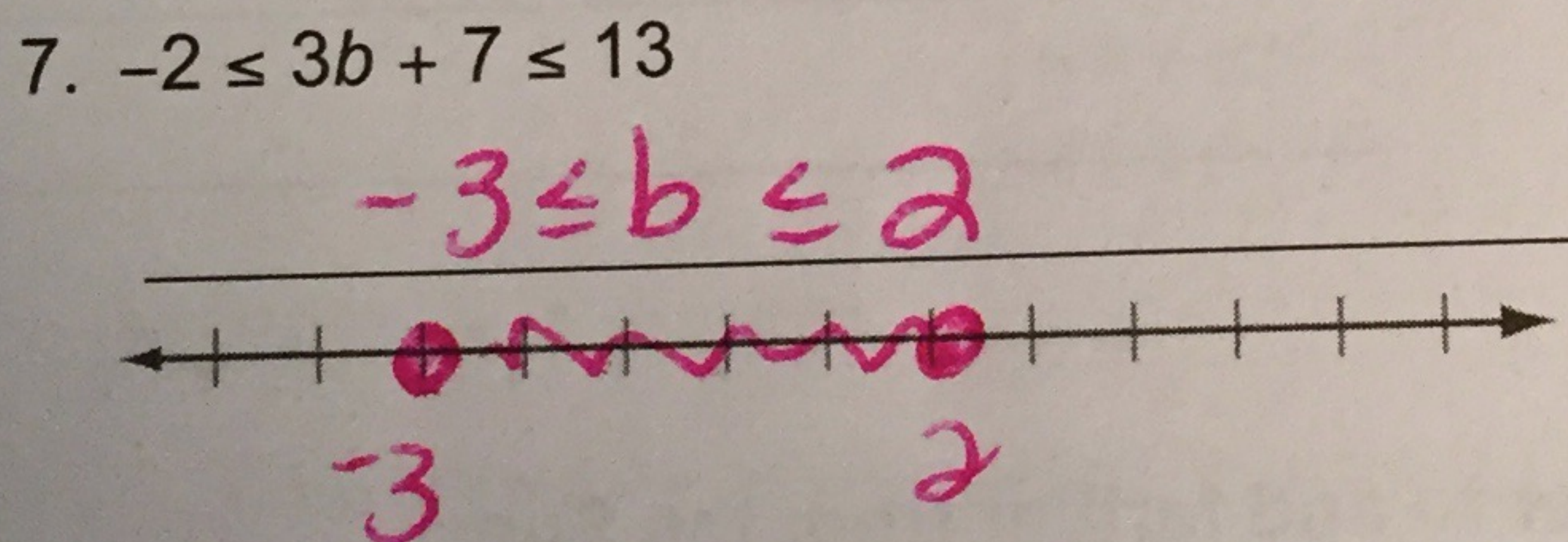
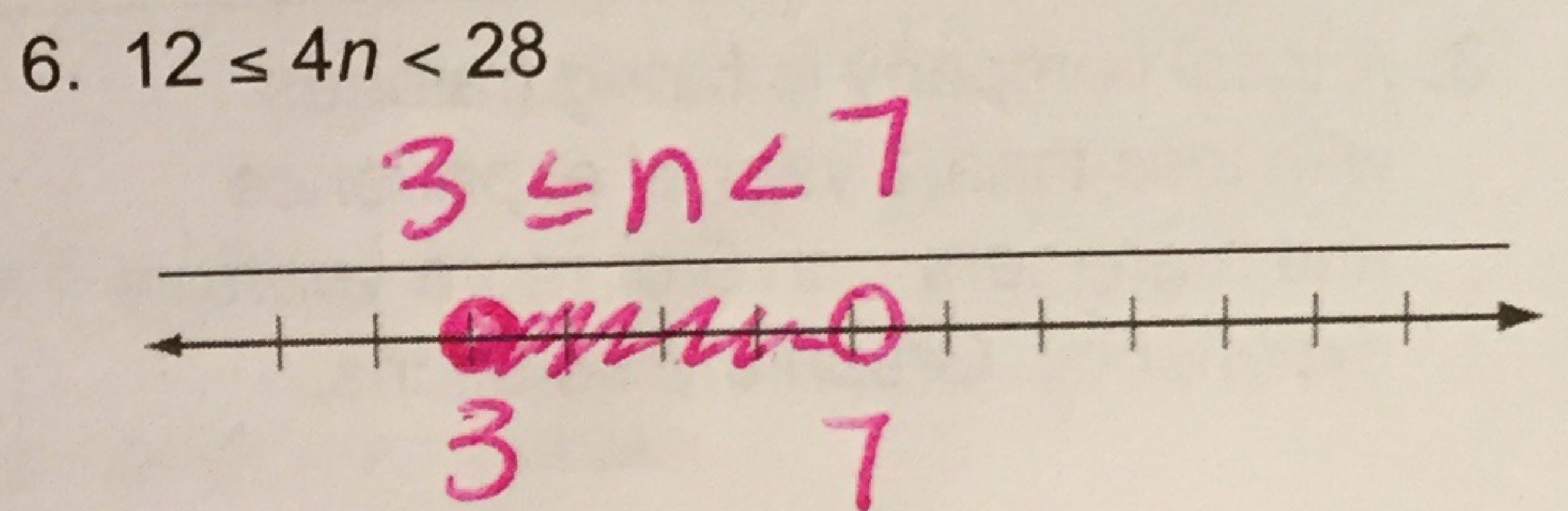
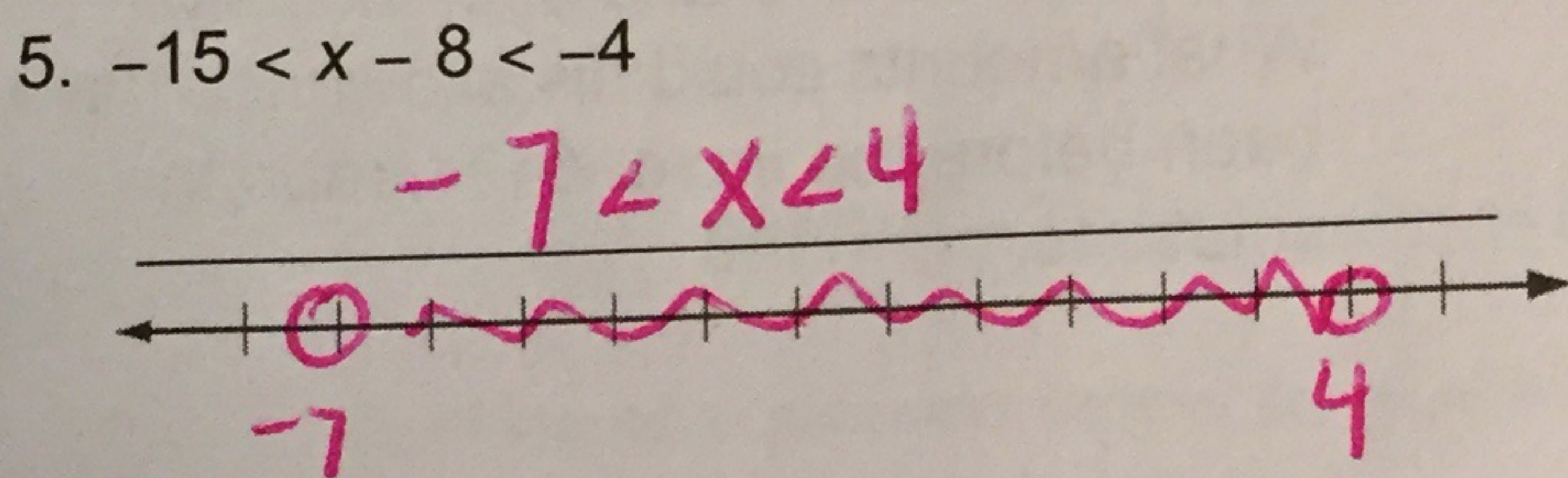
City	Population (2004)	Population Change (from 2003)
Lakewood, CO	141,301	-830
Vallejo, CA	118,349	-1155
Carrollton, TX	117,823	+1170
Manchester, NH	109,310	+261

Additional Practice

Write the compound inequality shown by each graph.

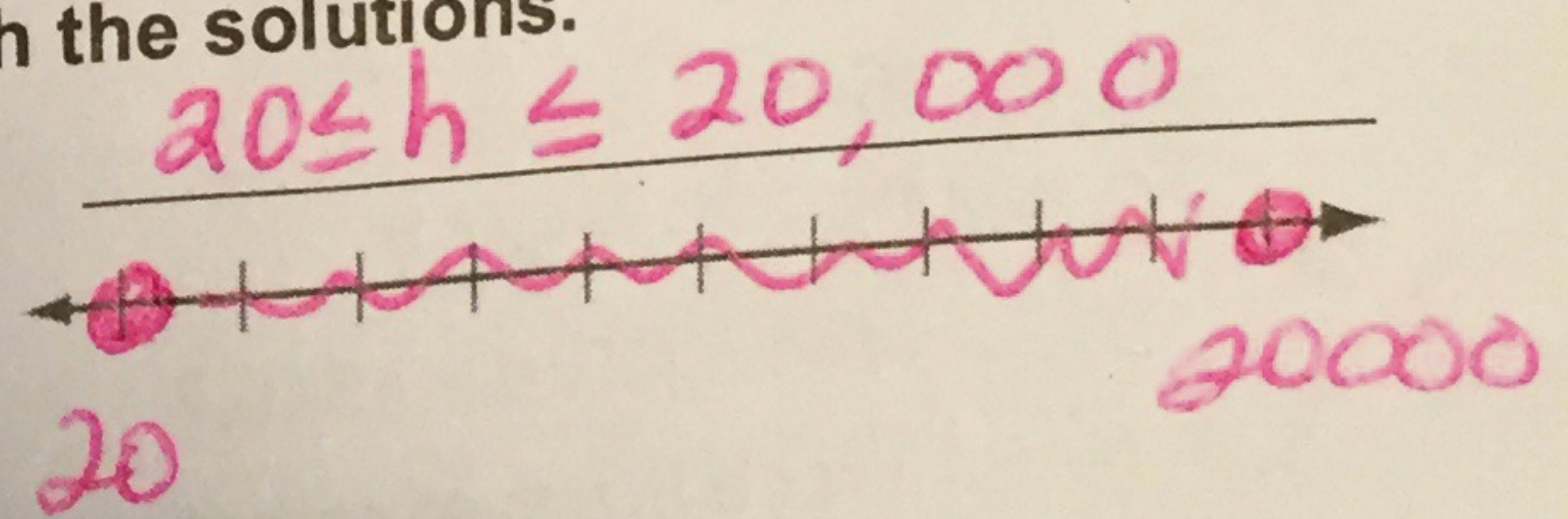


Solve each compound inequality and graph the solutions.

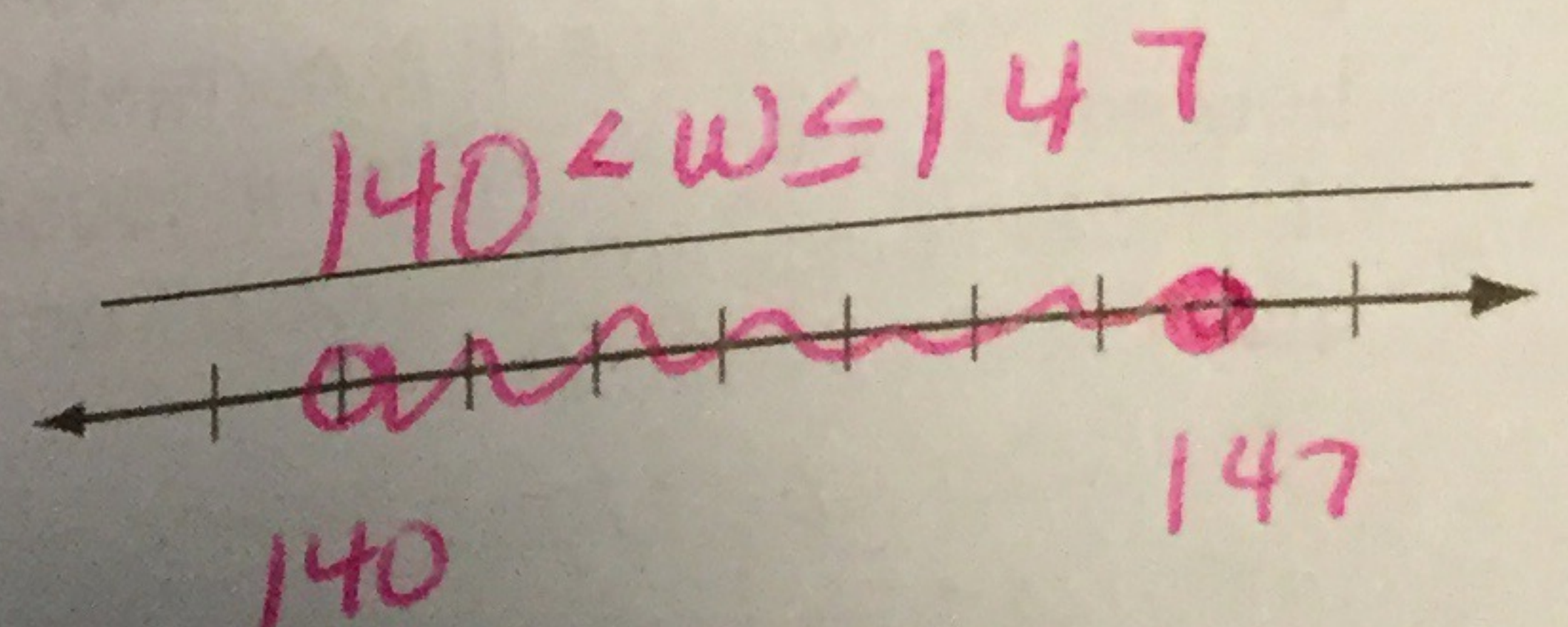


Write a compound inequality for each problem. Graph the solutions.

11. The human ear can distinguish sounds between 20 Hz and 20,000 Hz, inclusive.



12. For a man to box as a welterweight, he must weigh more than 140 lbs, but at most 147 lbs.



Problem Solving

Write and solve an inequality for each situation.

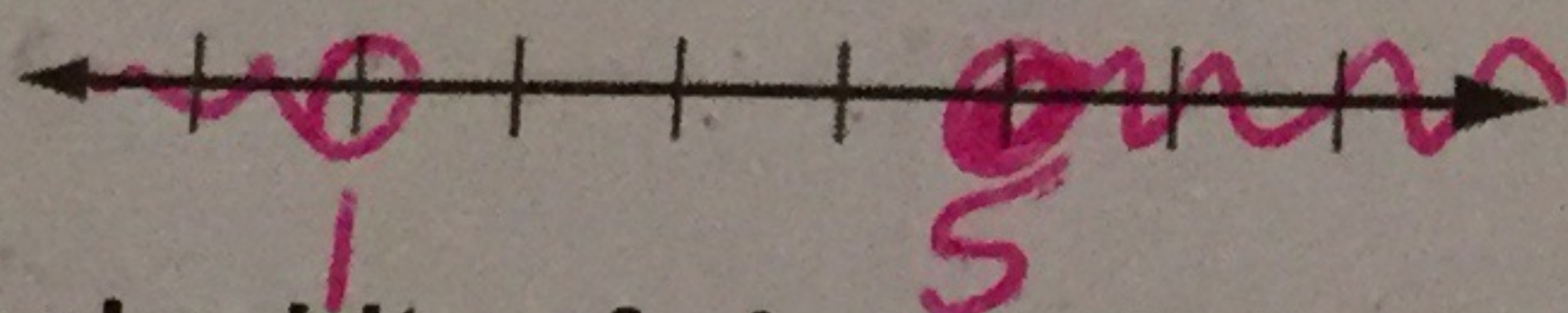
1. The Mexican Tetra is a tropical fish that requires a water temperature between 68 and 77 degrees Fahrenheit, inclusive. An aquarium is heated 8 degrees so that a Tetra can live in it. What temperatures could the water have been before the heating?

$$68 \leq t + 8 \leq 77$$

$$60 \leq t \leq 69$$

3. A local company is hiring trainees with less than 1 year of experience and managers with 5 or more years of experience. Graph the solutions.

$$y < 1 \text{ or } y \geq 5$$



2. Nerissa's car can travel between 380 and 410 miles on a full tank of gas. She filled her gas tank and drove 45 miles. How many more miles can she drive without running out of gas?

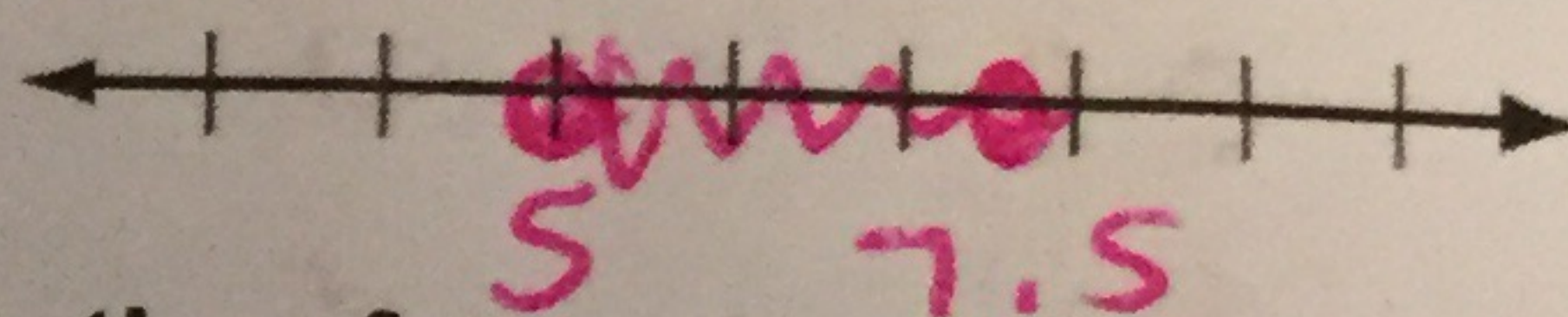
$$380 \leq m + 45 \leq 410$$

$$335 \leq m \leq 365$$

4. Marty's allowance is doubled and is now between \$10 and \$15, inclusive. What amounts could his allowance have been before the increase? Graph the solutions.

$$10 \leq 2a \leq 15$$

$$5 \leq a \leq 7.5$$



The elliptical orbits of planets bring them closer to and farther from the Sun at different times. The closest (perihelion) and furthest (aphelion) points are given for three planets below. Use this data to answer questions 5–7.

Planet	Perihelion (in 10^6 km)	Aphelion (in 10^6 km)
Uranus	2741.3	3003.6
Neptune	4444.5	4545.7
Pluto	4435.0	7304.3

5. Which inequality represents the distances d from the sun to Neptune?
- A $d \leq 4444.5$
 B $d \leq 4545.7$
 C $4444.5 \leq d \leq 4545.7$
 D $d = 4444.5$ OR $d \geq 4545.7$
6. A NASA probe is traveling between Uranus and Neptune. It is currently between their orbits. Which inequality shows the possible distance p from the probe to the Sun?
- F $1542.1 < p < 1703.2$
 G $2741.3 < p < 4545.7$
 H $3003.6 < p < 4444.5$
 J $7185.8 < p < 7549.3$
7. At what distances o do the orbits of Neptune and Pluto overlap?
- A $4435.0 \leq o \leq 4444.5$
 B $4435.0 \leq o \leq 4545.7$
 C $4444.5 \leq o \leq 7304.3$
 D $4545.7 \leq o \leq 7304.3$