## Percentiles for Ungrouped Data Total points = 52

17 20 23 25 28 28 32 32 35 37 41 46 47 48 51 52 55 55 56 60 
$$\checkmark$$
  $n = 20$ 

1. 
$$P_{35} = \frac{35}{100}(n+1)_{th}$$
 6.  $P_{50} = \frac{50}{100}(n+1)_{th}$  6.  $P_{50} = \frac{50}{100}(n+1)_{th}$  6.  $P_{50} = \frac{50}{100}(20+1)_{th}$  7.  $P_{50} = \frac{50}{100}(20+1)_{th}$  7.  $P_{50} = \frac{50}{100}(20+1)_{th}$  7.  $P_{50} = \frac{50}{100}(20+1)_{th}$  7.  $P_{50} = \frac{50}{100}(20+1)_{th}$  9.  $P_{50} = \frac{50}{100}(20+1)_{t$ 

$$P_{35} = 7.35_{th} \checkmark \qquad P_{50} = 10.5_{th} \checkmark \qquad P_{50} = 39 \checkmark$$

$$2. P_{60} = \frac{60}{100} (n+1)_{th} \checkmark \qquad 7. P_{95} = \frac{95}{100} (n+1)_{th} \checkmark \qquad P_{95} = \frac{95}{100} (20+1)_{th} \checkmark \qquad P_{95} = \frac{95}{100} (20+1)_{th} \checkmark \qquad P_{95} = \frac{10}{100} (20+1)_{th} \checkmark \qquad P_{95} = 19.95_{th} \checkmark \qquad P_{95} = 19.95_{th} \checkmark \qquad P_{95} = 19.95_{th} \checkmark \qquad P_{95} = 59.8 \checkmark$$

$$3. P_{30} = \frac{30}{100} (n+1)_{th} \checkmark \qquad 8. P_{72} = \frac{72}{100} (n+1)_{th} \checkmark$$

$$P_{60} = 12.6_{th} \checkmark \qquad P_{95} = 19.95_{th} \checkmark$$

$$P_{60} = 46.6 \checkmark \qquad P_{95} = 59.8 \checkmark$$
3. 
$$P_{30} = \frac{30}{100} (n+1)_{th} \checkmark \qquad 8. \qquad P_{72} = \frac{72}{100} (n+1)_{th} \checkmark$$

$$P_{30} = \frac{3}{10} (20+1)_{th} \checkmark \qquad P_{72} = \frac{18}{25} (21)_{th} \checkmark$$

$$P_{30} = 6.3_{th} \checkmark \qquad P_{72} = 15.12_{th} \checkmark$$

$$P_{30} = 29.2 \checkmark \qquad P_{72} = 51.12 \checkmark$$

4. 
$$P_{25} = \frac{25}{100}(n+1)_{th} \checkmark$$
 $P_{25} = \frac{25}{100}(20+1)_{th} \checkmark$ 
 $P_{25} = \frac{1}{4}(21)_{th} \checkmark$ 
 $P_{25} = 5.25_{th} \checkmark$ 
 $P_{25} = 28 \checkmark$ 
 $P_{45} = \frac{45}{100}(n+1)_{th} \checkmark$ 
 $P_{45} = \frac{45}{100}(20+1)_{th} \checkmark$ 
 $P_{45} = \frac{9}{20}(21)_{th} \checkmark$ 
 $P_{45} = 9.45_{th} \checkmark$ 
 $P_{45} = 35.9 \checkmark$ 

$$P_{25} = 26 \checkmark \qquad P_{45} = 33.9 \checkmark$$

$$5. P_{82} = \frac{82}{100} (n+1)_{th} \checkmark \qquad 10. P_{15} = \frac{15}{100} (n+1)_{th} \checkmark$$

$$P_{82} = \frac{82}{100} (20+1)_{th} \checkmark \qquad P_{15} = \frac{15}{100} (20+1)_{th} \checkmark$$

$$P_{82} = \frac{41}{50} (21)_{th} \checkmark \qquad P_{15} = \frac{20}{3} (21)_{th} \checkmark$$

$$P_{82} = 17.22_{th} \checkmark \qquad P_{15} = 3.15_{th} \checkmark$$

$$P_{15} = 23.3 \checkmark$$

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17 20 23 25 28 28 32 32 35 37  
41 46 47 48 51 52 55 55 56 60 
$$n = 20$$

1. 
$$P_{35} = \frac{35}{100}(n+1)_{th}$$
 6.  $P_{50} = \frac{50}{100}(n+1)_{th}$  6.  $P_{50} = \frac{50}{100}(n+1)_{th}$  6.  $P_{50} = \frac{50}{100}(20+1)_{th}$  6.  $P_{50} = \frac{50}{100}(20+1)_{th}$  6.  $P_{50} = \frac{50}{100}(20+1)_{th}$  7.  $P_{50} = \frac{1}{2}(21)_{th}$  8.  $P_{50} = \frac{1}{2}(21)_{th}$  8.  $P_{50} = 39$  8.  $P_{50} = \frac{95}{100}(n+1)_{th}$  8.  $P_{60} = \frac{60}{100}(20+1)_{th}$  8.  $P_{60} = \frac{3}{5}(21)_{th}$  9.  $P_{6$ 

3. 
$$P_{30} = \frac{30}{100}(n+1)_{th}$$
 \( \text{ 8. }  $P_{72} = \frac{72}{100}(n+1)_{th}$  \( \text{ 72} \)
$$P_{30} = \frac{3}{10}(21)_{th} \( \text{ 93} \)
$$P_{30} = 6.3_{th} \( \text{ 94} \)
$$P_{30} = 29.2 \( \text{ 95} \)$$
4.  $P_{25} = \frac{25}{100}(n+1)_{th} \( \text{ 95} \)$ 
4.  $P_{25} = \frac{25}{100}(20+1)_{th} \( \text{ 96} \)$ 
4.  $P_{25} = \frac{45}{100}(20+1)_{th} \( \text{ 96} \)$ 
4.  $P_{25} = \frac{1}{3}(21)_{th} \( \text{ 96} \)$ 
5.  $P_{32} = \frac{32}{100}(20+1)_{th} \( \text{ 96} \)$ 
6.  $P_{15} = \frac{3}{100}(20+1)_{th} \( \text{ 96} \)$ 
6.  $P_{15} = \frac{3}{3}(21)_{th} \( \text{ 96} \)$ 
6.  $P_{15} = \frac{3}{3}(21$$$$$

 $P_{15} = 23.3 \checkmark$ 

 $P_{82} = 55 \checkmark$ 

## Percentiles for Ungrouped Data Total points = 52

7 20 23 25 28 28 32 32 35 37  
1 46 47 48 51 52 55 55 56 60  

$$n = 20 \checkmark$$
  
.  $P_{35} = \frac{35}{100}(n+1)_{th} \checkmark$  6.  $P_{50} = \frac{50}{100}(n+1)_{th} \checkmark$ 

1. 
$$P_{35} = \frac{35}{100}(n+1)_{th}$$
 6.  $P_{50} = \frac{50}{100}(n+1)_{th}$  7.  $P_{50} = \frac{3}{100}(20+1)_{th}$  7.  $P_{50} = \frac{9}{100}(20+1)_{th}$  8.  $P_{50} = \frac{9}{100}(20+1)_{th}$  8.  $P_{72} = \frac{7}{100}(20+1)_{th}$  8.  $P_{72} = \frac{7}{100}(20+1)_{th}$  8.  $P_{72} = \frac{1}{15}(21)_{th}$  8.  $P_{72} = \frac{1}{15}(21)_{th}$  8.  $P_{72} = \frac{1}{15}(21)_{th}$  8.  $P_{72} = \frac{1}{100}(20+1)_{th}$  9.  $P_{45} = \frac{45}{100}(20+1)_{th}$  9.  $P_{45} = \frac{45}{100}(20+1)_{th}$  9.  $P_{45} = \frac{30}{20}(21)_{th}$  9.  $P_{45} = \frac{45}{100}(20+1)_{th}$  9.  $P_{45} = \frac{3}{20}(21)_{th}$  9.  $P_{45} =$ 

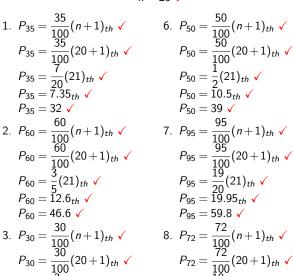
## Percentiles for Ungrouped Data

 $P_{15} = 23.3 \checkmark$ 

 $P_{82} = 55 \ \checkmark$ 

 $P_{82} = 55 \ \checkmark$ 

Total points = 52



$$P_{35} = 32 \checkmark$$

$$P_{60} = \frac{60}{100}(n+1)_{th} \checkmark$$

$$P_{60} = \frac{60}{100}(20+1)_{th} \checkmark$$

$$P_{60} = \frac{3}{5}(21)_{th} \checkmark$$

$$P_{60} = 12.6_{th} \checkmark$$

$$P_{60} = 46.6 \checkmark$$

$$P_{60} = 46.6 \checkmark$$

$$P_{60} = \frac{30}{100}(n+1)_{th} \checkmark$$

$$P_{30} = \frac{30}{100}(n+1)_{th} \checkmark$$

$$P_{30} = \frac{30}{100}(20+1)_{th} \checkmark$$

$$P_{30} = \frac{30}{100}(20+1)_{th} \checkmark$$

$$P_{30} = \frac{30}{100}(20+1)_{th} \checkmark$$

$$P_{30} = \frac{3}{10}(21)_{th} \checkmark$$

$$P_{30} = 6.3_{th} \checkmark$$

$$P_{30} = 29.2 \checkmark$$

$$P_{72} = 15.12_{th} \checkmark$$

$$P_{72} = 15.12_{th} \checkmark$$

$$P_{72} = 51.12 \checkmark$$

$$P_{72} = 15.12_{th} \checkmark$$

$$P_{72} = 15.12_{th} \checkmark$$

$$P_{72} = 51.12 \checkmark$$

$$P_{72} = 15.12_{th} \checkmark$$

$$P_{73} = 15.12_{th} \checkmark$$

$$P_{745} = 9.45_{th} \checkmark$$

$$P_{75} = 3.5.9 \checkmark$$

$$P_{75} = 3.5.9 \checkmark$$

$$P_{75} = 3.5.9 \checkmark$$

$$P_{75} = 3.5.15_{th} \checkmark$$

$$P_{75} = 3.15_{th} \checkmark$$

$$P_{75} = 3.15_{th} \checkmark$$

 $P_{15} = 23.3 \checkmark$